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2505

No. .....

United States Circuit Court of Appeals
for the Ninth Circuit

HASSAM PAVING COMPANY AND OREGON HASSAM PAVING COMPANY,

Appellees,

vs.

CONSOLIDATED CONTRACT COMPANY AND PACIFIC COAST CASUALTY COMPANY,

Appellants.

Transcript of Record (Two Volumes)
Vol. I

(pp. 1 to 345 and index to Vol I)

UPON APPEAL FROM THE UNITES STATES DISTRICT COURT OF OREGON

LOUIS W. SOUTHGATE,
CAREY & KERR,
Solicitors and Counsel for Appellees.

JESSE STEARNS,
JOHN H. HALL,
Solicitors and Counsel for Appellants.

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REBUTTAL PROOFS FOR COMPLAINANTS.

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Complainants' Exhibits.

Defendants' Exhibits.

District Court of the United States,

DISTRICT OF OREGON,

(In Equity).

HASSAM PAVING COMPANY, a corporation and OREGON HASSAM PAVING COMPANY, a corporation, Complainants, vs. CONSOLIDATED CONTRACT COMPANY, a corporation and PACIFIC COAST CASUALTY COMPANY, a corporation, Defendants.	STIPULATION.

It is hereby stipulated and agreed by and between the parties hereto that the amended bill of complaint hereto attached may be filed by the complainants in the above-entitled suit and that the defendants may have to and including the first Monday in May, 1912, in which to answer the same.

Dated, April 11, 1912.

CAREY & KERR,
Attorneys for Complainants.

HALL & STEARNS,
Attorneys for Defendants.

DISTRICT COURT OF THE UNITED STATES,

DISTRICT OF OREGON,

(In Equity).

HASSAM PAVING COMPANY, a corporation and OREGON HASSAM PAVING COMPANY, a corporation, Complainants, vs. CONSOLIDATED CONTRACT COMPANY, a corporation and PACIFIC COAST CASUALTY COMPANY, a corporation, Defendants.	AMENDED BILL OF COMPLAINT.

TO THE JUDGES OF THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF OREGON:

HASSAM PAVING COMPANY, a corporation duly created and existing under the laws of the Commonwealth of Massachusetts and having its principal place of business in the City of Worcester, County of Worcester, in said Commonwealth, a citizen of the State of Massachusetts; and OREGON HASSAM PAVING COMPANY, a corporation duly created and existing under the laws of the State of Oregon and having its principal place of business in the City of Portland, County of Multnomah, in said State, a citizen of the

State of Oregon, by leave of court brings this their amended bill of complaint against CONSOLIDATED CONTRACT COMPANY, a corporation organized and existing under the laws of the State of Oregon, a citizen of the State of Oregon and a resident and inhabitant of the City of Portland, County of Multnomah, in said State of Oregon; and PACIFIC COAST CASUALTY COMPANY, a corporation organized and existing under the laws of the State of California, having its principal office in the City of San Francisco in the said State, and a citiezn of California and a resident and inhabitant of the State of California.

And thereupon your orators complain and say:

I.

That the Hassam Paving Company at all the times hereinafter mentioned was and still is a corporation duly created and existing under the laws of the State of Massachusetts, and having its principal place of business in the City of Worcester, County of Worcester, in said Commonwealth; that at all said times your orator, the Oregon Hassam Paving Company, was and still is a corporation duly created and existing under the laws of the State of Oregon and having its principal place of business in the City of Portland, County of Multnomah, in said State; that the defendant Consolidated Contract Company at all said times was and still is a corporation duly created and existing under the laws of the State of Oregon and a resident of the said State; and the defendant Pacific Coast Casualty Company was at all of said times and

still is a corporation duly created and existing under the laws of the State of California and a resident of the State of California but having an office and engaged in business within the State of Oregon.

II

That heretofore, to-wit, prior to the 7th day of June, 1905, one Walter E. Hassam, being then a citizen of the United States, residing at the said City of Worcester, in the County of Worcester, in the State of Massachusetts, was the sole, original and first inventor of a certain new and useful invention entitled "Pavement and Process of Laying the Same," a more particular description of which will be found in the letters patent issued therefor by the Government of the United States, hereinafter referred to, and to which special reference is hereby made.

III

That the said Pavement and Process of Laying the Same was a new and useful invention which was neither known nor used by others in this country before the invention and discovery thereof by the said Hassam, and which was never patented nor described in any printed publication in this, or any foreign country before the invention and discovery thereof by the said Hassam, or more than two years before his application for United States Letters Patent therefor, and at the time of his application for United States letters patent therefor, as hereinafter alleged, the same had not been in public use or on sale in the

United States for more than two years, and was not patented or caused to be patented by him, or by his legal representatives or assigns, in any foreign country upon an application which was filed more than twelve months prior to the filing of his said application in this country, nor had the same been abandoned by him.

IV

And your orators further show unto your Honors that the said Hassam, being as aforesaid, the original and first inventor of said Paving and Process of Laying the Same, did on the said 7th day of June, 1905, duly and regularly file in the patent office of the United States an application in writing praying for the granting and issuance to him of letters patent of the United States for the same; that prior to the granting and issuing of any patent therefor, the said Hassam, for value received, did, by an instrument in writing under his hand and seal, duly witnessed and executed, sell, assign and transfer unto one Charles K. Pevey of Worcester, County of Worcester, State of Massachusetts, an undivided one-half interest in and to the said invention, and in and by said assignment, did request the Commissioner of Patents to issue such patent as might be granted upon such application, to the said Walter E. Hassam and Charles K. Pevey, jointly, which assignment in writing was filed and recorded in the patent office of the United States prior to the granting and issuance of any patent for said invention; and your orators pray that the said instrument in writing may be deemed and

taken as part of this bill, and to the original or to a duly authenticated copy thereof now in your orators' possession and in court to be produced, your orators pray leave to refer.

V

And your orators further show unto your Honors that after proceedings duly and regularly had and taken in the matter of said application, to-wit, on May 1, 1906, letters patent of the United States bearing date on that day and numbered 819,652, were granted, issued and delivered by the Government of the United States to said Walter E. Hassam and Charles K. Pevey, jointly, whereby there was granted to them, their heirs or assigns, for the term of seventeen years from the first day of May, 1906, the sole and exclusive right, liberty and privilege, to make, use, and vend the said invention throughout the United States of America and the territories thereof.

VI

And your orators further show unto your Honors that said letters patent of the United States were issued in due form of law in the name of the United States under the seal of the Patent Office of the United States, signed by the Commissioner of Patents of the United States, and prior to the issuance thereof all proceedings were had and taken which were required by law to be had and taken prior to the issuance of letters patent for new and useful inventions; and said letters patent, or a duly authenticated copy thereof are ready in court to be produced by your orators,

and which are hereby referred to, and by such reference made a part hereof.

VII.

And your orators further show unto your Honors that before the infringement hereinafter complained of, said Walter E. Hassam and said Charles K. Pevey, by an instrument in writing, duly signed, sealed and delivered by them, and recorded in the United States Patent Office, did sell, assign and transfer to your orator, the Hassam Paving Company, all the right, title and interest in and to said invention and in and to said letters patent numbered 819,652, obtained thereon, together with all claims, demands and causes of action for the past infringement of the said letters patent wheresoever or by whomsoever committed; and ever since the execution and delivery of said assignment your orator, the Hassam Paving Company, has been, and still is the sole and exclusive owner of said letters patent.

VIII

That heretofore, to-wit, prior to the 30th day of November, 1906, the said Walter E. Hassam was the sole, original and first inventor of a certain new and useful invention entitled, "Artificial Structure and Process of Making the Same," a more particular description of which will be found in the letters patent issued therefor by the Government of the United States and hereinafter referred to and to which special reference is hereby made.

IX

That the said Artificial Structure and Process of Making the Same was a new and useful invention which was neither known nor used by others in this country before the invention and discovery thereof by the said Hassam, and which was neither patented nor described in any printed publication in this or any foreign country before the invention and discovery thereof by the said Hassam, or more than two years before his application for United States letters patent therefor, and at the time of his application for United States letters patent therefor, as hereinafter alleged, the same had not been in public use or on sale in the United States for more than two years, and was not patented or caused to be patented by him, or by his legal representatives or assigns in any foreign country upon an application which was filed more than twelve months prior to the filing of his said application in this country, nor had the same been abandoned by him.

X

And your orators further show unto your Honors that the said Hassam being, as aforesaid, the original and first inventor of said Artificial Structure and Process of Making the Same, did on the said 30th day of November, 1906, duly and regularly file in the Patent Office of the United States an application in writing praying for the granting and issuance to him of letters patent of the United States for the same; that prior to the granting and issuing of any patent

therefor, the said Hassam, for value received, did, by an instrument in writing under his hand and seal, duly witnessed and executed, sell, assign and transfer unto your orator, the Hassam Paving Company, all the right, title and interest in and to said invention, and in and by said assignment did request the Commissioner of Patents to issue such patents as might be granted upon said application to your orator, the Hassam Paving Company, which assignment in writing was filed and recorded in the Patent Office of the United States prior to the granting and issuance of any patent for said invention; and your orators pray that said instrument in writing may be deemed and taken as a part of this bill, and to the original or to a duly authenticated copy thereof now in your orators' possession, and in court to be produced, your orators pray leave to refer.

XI.

And your orators further show unto your Honors that after proceedings duly and regularly had and taken in the matter of said application, to-wit, on the 30th day of July, 1907, letters patent of the United States bearing date on that day and numbered 861,650 were granted, issued and delivered by the Government of the United States to your orator, the Hassam Paving Company, whereby there was granted to your orator, the Hassam Paving Company, its legal representatives or assigns for the term of seventeen years from the said 30th day of July, 1907, the sole exclusive right, liberty and privilege, to make, use and vend

the said invention throughout the United States of America and the territories thereof; that ever since the issuance of said letters patent your orator, the Hassam Paving Company, has been and still is the sole and exclusive owner of said letters patent.

XII.

And your orators further show unto your Honors that said letters patent of the United States were issued in due form of law in the name of the United States under the seal of the Patent Office of the United States, signed by the Commissioner of Patents of the United States, and prior to the issuance thereof all proceedings were had and taken which were required by law to be had and taken prior to the issuance of letters patent for new and useful inventions, and said letters patent are ready in court to be produced by your orators, or a duly authenticated copy thereof, and which are hereby referred to and by such reference made a part hereof.

XIII.

And your orators further show unto your Honors that heretofore, to-wit, prior to the 14th day of November, 1906, the said Walter E. Hassam was the sole, original and first inventor of a certain new and useful invention entitled "Process for Laying Pavement", a more particular description of which will be found in the letters patent issued therefor by the Government of the United States, and hereinafter re-

ferred to, and to which special reference is hereby made.

XIV.

That the said Process for Laying Pavement was a new and useful invention which was neither known, nor used by others in this country before the invention and discovery thereof by the said Hassam and which was neither patented nor described in any printed publication in this, or any foreign country, before the invention and discovery thereof by the said Hassam, or more than two years before his application for United States letters patent therefor, and at the time of his application for United States letters patent therefor, as hereinafter alleged, the same had not been in public use or on sale in the United States for more than two years, and was not patented nor caused to be patented by him, or by his legal representative or assigns in any foreign country upon any application which was filed more than twelve months prior to the filing of his said application in this country, nor had the same been abandoned by him.

XV.

And your orators further show unto your Honors that the said Hassam, being as aforesaid, the original and first inventor of said Process for laying Pavement did on the said 14th day of November, 1906, duly and regularly file in the Patent Office of the United States an application in writing praying for the granting and issuance to him of letters patent of the United States

for the same; that prior to the granting and issuing of any patent therefor, the said Hassam for value received, did by an instrument in writing under his hand and seal, duly witnessed and executed, sell, assign and transfer to your orator, the Hassam Paving Company, all the right, title and interest in and to said invention, and in and by said assignment did request the Commissioner of Patents to issue such patent as might be granted upon said application, to your orator, the Hassam Paving Company, which assignment in writing was filed and recorded in the Patent Office of the United States prior to the granting and issuance of any patent for said invention; and your orators pray that said instrument in writing may be deemed and taken as a part of this bill and to the original or to a duly authenticated copy thereof, now in your orators' possession and in court to be produced, your orators pray leave to refer.

XVI.

And your orators further show unto your Honors that after proceedings duly and regularly had and taken in the matter of said application, to-wit, on April 23rd, 1907, letters patent of the United States bearing date on that day and numbered 851,625 were granted, issued and delivered by the government of the United States to your orator, the Hassam Paving Company, whereby there was granted to it, its assigns or legal representatives, for the term of seventeen years from said 23rd day of April, 1907, the sole and exclusive right, liberty and privilege to make, use and vend said

invention throughout the United States of America and the territories thereof, and ever since the issuance of said letters patent, as aforesaid, your orator, the Hassam Paving Company, has been and still is the sole and exclusive owner and holder of said letters patent.

XVII.

And your orators further show unto your Honors that said letters patent of the United States were issued in due form of law in the name of the United States, under the seal of the Patent Office of the United States, signed by the Commissioner of Patents of the United States, and prior to the issuance thereof, all proceedings were had and taken which were required by law to be had and taken prior to the issuance of letters patent for new and useful inventions, and said letters patent are ready in court to be produced by your orators, or a duly authenticated copy thereof, and which are hereby referred to, and by such reference made a part hereof.

XVIII.

And your orators further aver that all of said inventions described in and claimed by the said three letters patent number 819,652, number 861,650 and number 851,625 are capable of embodiment and conjoint use in one and the same structure and have been so embodied and conjointly used by them, and will be so embodied and conjointly used by the defendant Consolidated Contract Company in its threatened infringement hereinafter complained of.

XIX.

Your orators further say that the Hassam Paving Company was organized particularly to exploit and develop said inventions, that it made a large investment for this purpose, and that it and its licensees have made and constructed large amounts of pavements which in construction and mode of operation embody the invention and discovery described and claimed in said three letters patent numbers 819,652, 861,650 and 851,625; that said inventions or discoveries have been recognized throughout the United States as a higher order of excellence and the pavement constructed thereunder has been adopted as the standard by many municipalities and highway commissions; that the rights covered by said three several patents have been acquiesced in generally by the public throughout the United States, with the exception of these defendants, and that the exclusive right to control the same has been and still is of great benefit and advantage to your orators and is the basis of a large and substantial business.

XX.

And your orators further say that your orator, the Hassam Paving Company, on or about the 16th day of July, A. D. 1909, gave and conveyed unto your orator, the Oregon Hassam Paving Company, the exclusive right to use and make said improvements in Pavements and Foundations, and Processes of Laying the Same, according to the said three several letters patent and each of them above recited, for and during

the term beginning the 16th day of July, A. D. 1909, and ending with the expiration of the term of said letters patent in the State of Oregon and a strip in the Southern part of the State of Washington extending from the westerly line of said State, easterly to the Columbia River, and being twenty-five (25) miles in width, measured from the southern boundary of the State of Washington, north, but not elsewhere or in any other place, upon the payment of certain license fees or royalties and certain conditions contained in said license agreement, as in and by said license agreement now in your orators' possession and in Court to be produced, to which your orators pray leave to refer, whereby the said Oregon Hassam Paving Company became the exclusive licensee to use and make under said patents in this district.

XXI.

And your orators further aver that your orator, the Oregon Hassam Paving Company, was organized particularly to exploit and develop said inventions in this district; that it has made a large investment for this purpose; that it has had made and constructed large amounts of pavements which in construction and mode of operation embody the invention or discovery described and claimed in said three letters patent number 819,652, number 861,650 and number 851,625; that the said inventions or discoveries have been recognized in this district as of a high order of excellence; that the pavement constructed thereunder has been put in many streets in this district; and that

the exclusive right of your orator, the Oregon Hassam Paving Company, to use and make pavements under said patents, has been and still is, of great benefit and advantage and is the basis of a large and substantial business in this district. That particularly in the City of Portland in the State of Oregon, the business of your orator the Oregon Hassam Paving Company, has been and is extensive and profitable in laying pavements under said patents, and at that place your said orator has invested a large amount of capital, aggregating many thousands of dollars, in advertising and introducing the said pavement and demonstrating the advantage thereof for municipal use as a street pavement, and in providing the machinery and implements used in laying said pavements, and has taken many contracts from the City of Portland prior to the filing of this bill of complaint for the laying of said pavements, and has actually laid and constructed said pavements under said patents upon many streets in the said city. That some of the work of laying said pavements is now under way and uncompleted, and other pavements have been fully completed. And that the City of Portland has now before its various officers and its executive board and council, proceedings for the improvement of many other streets with said pavement, which proceedings are pending and uncompleted, but in due course will result in the advertising for bids and the letting of contracts for the improvement of many streets with said pavement embodying the invention and discovery described in and claimed in the said three letters pat-

ent, number 819,652, number 861,650 and number 851,625.

XXII.

And your orators further aver that upon every pavement or artificial structure made by them and by said licensees and containing the invention of said three several letters patent, numbers 819,652, 861,650 and 851,625, sufficient notice has been given to the public that the same is patented by affixing thereon the word "Patented," together with the day and year the said three several letters patent were respectively granted.

XXIII.

Your orators further aver that the said defendants, well knowing the premises, without license or right, in violation and infringement of said letters patent and of the exclusive right thereunder granted and secured as aforesaid, and since your orator, the Hassam Paving Company, has been the exclusive owner of said patents, and since your orator, the Oregon Hassam Paving Company, has been the licensee as aforesaid, under said patents, and within the period of six years last past and prior to the filing of this bill of complaint in the City of Portland, has infringed each and all of the claims of each and all of the said letters patent and has made, sold and used, and is now making, selling and using and threatens to continue to make, sell and use pavements and artificial structures which contain the inventions covered and secured by

said three several letters patent, numbers 819,652, 861,650 and 851,625, and that in each of the said pavements and artificial structures made, sold and used by the said defendants, all of the inventions described in and claimed by the said three several letters patent were conjointly combined and used, but how much pavement and artificial structure the said defendants have made, sold or used, or caused to be made, sold or used in the infringement of your orator's aforesaid patents, numbers 819,652, 861,650 and 851,625, your orators are ignorant and cannot set forth.

XXIV.

And your orators further aver that the said defendants, since the granting of said letters patent, have been duly notified of their infringement thereof but have continued after such notice to make, use and sell pavements and artificial structures in infringement of said three several letters patent, numbers 819,652, 861,650 and 851,625, and in defiance of your orators' aforesaid vested rights.

XXV.

And your orators further aver that the City of Portland in Oregon, duly adopted an ordinance entitled "Ordinance number 21,172; an ordinance in relation to the improvement of streets and declaring an emergency," which said ordinance was passed by the Council of the said City on the 27th day of April, 1910, and was approved by the Mayor of the said City on the 4th day of May, 1910, and in and by the said or-

dinance the said City of Portland adopted specifications governing the laying of so-called "Hassam Pavement" within the said City of Portland, which said specifications contain the inventions covered and secured by the said three several letters patent, numbers 819,652, 861,650 and 851,625, and by the provisions of Section 28 of the said ordinance it was and is provided that said Hassam pavement when laid on the streets of said City shall be as follows:

"SECTION 28. The roadway shall be graded the full width of the roadway down to subgrade as given by the City Engineer. Said subgrade shall be six (6) inches below the finished surface of the street.

Care must be taken to preserve the proper crown. All soft or springy places not affording a firm foundation shall be dug out and refilled with good earth, gravel or macadam, well rammed in place.

The entire roadbed shall be thoroughly rolled and compacted with a road roller weighing not less than ten tons, to the satisfaction of the City Engineer. Such rolling shall be completed in sections of at least one block and shall be tested and accepted by the City Engineer before any material for the pavement is placed thereon.

Rolling shall be continued until the street is rolled to the satisfaction of the City Engineer.

The thickness of pavement shall be not less than six (6) inches from subgrade to the finished grade of street.

Upon the finished subgrade clean, broken rock, ninety per cent. of amount varying in size from two and one-half (2½) inches to one and one-half

(1½) inches, shall be spread to a sufficient depth to bring the surface after rolling to the proper finished grade of the street, which shall be six (6) inches above subgrade.

This rock shall then be thoroughly compacted by rolling with a road roller, giving a compression of not less than 250 pounds per inch width of roller, and shall be firmly bedded, and the voids reduced to a minimum, and surface shall conform to grade and contour of the street. Such portions of pavement as it may not be possible to roll shall be thoroughly compressed by tamping.

The voids in the rock shall then be thoroughly filled with a grout consisting of one part of Portland cement to two parts of sand. This grout shall be sufficiently thin to flow freely, and shall be thoroughly and continuously mixed and poured upon the rock until all the voids are filled and the grout flushes to the surface under the rolling or compression, which shall immediately follow the grouting and shall be continued until no further compacting results.

Upon the surface of the pavement thus prepared shall be placed a very thin layer of peastone, which shall be thoroughly spread and rolled or compressed evenly and smoothly over the entire surface. The peastone layer shall have just sufficient thickness to insure the complete filling of the voids in the pavement surface. Rolling shall continue until the grout flushes to the surface.

After rolling, this surface shall, at the discretion of the City Engineer, be broomed until surplus water is removed and the surface presents a true and even appearance.

Suitable expansion joints shall be provided at

the curb or across the street as the City Engineer may decide necessary and so direct.

A template, the upper edge of which conforms to the contour of the finished grade, shall be placed transversely across the street at the point where the work of each day stops. This template shall be removed before continuing the grouting, care being taken not to disturb the set of the cement next to the template.

All operations shall be carried forward with as much speed as is possible, and in no case shall cement be rolled or compressed or worked after it has taken its initial set.

All paving shall be kept free from traffic for a period of not less than six (6) days after its completion, and longer if necessary in judgment of the City Engineer, before being opened up to the public for use.

The rock for making the concrete shall be the best hard, dark-colored, sound basalt rock, or granite, or equally hard stone, not less than ninety per cent. broken in pieces not longer than two and one-half (2½) inches in the largest diameter, nor smaller than one and one-half (1½) inches in diameter.

The broken rock shall be screened so that all dust, clay, loam, vegetable matter and pieces smaller than one-half (½) inch in diameter shall be removed. The rock shall be thoroughly washed if considered necessary by the City Engineer.

All sand must be clean, coarse and sharp; it must range uniformly from fine to coarse All must pass a sieve having four meshes per linear inch and not more than ten per cent. must pass a sieve having thirty meshes per linear inch.

> In measuring the aggregate, one sack of cement shall be taken as equal to one cubic foot. If barrel cement is used, a barrel shall be taken as four cubic feet.

And your orators pray that the said ordinance may be deemed and taken as part of this bill, and to the original of, to a duly authenticated copy thereof now in your orators' possession and in court to be produced, your orators pray leave to refer.

XXVI

And your orators further aver that in September, 1910, the Council of the said City of Portland, deeming it expedient and necessary to improve Commercial Street from the north line of Skidmore Street to the south line of Killingsworth Avenue in the said City, directed the City Engineer of said City to prepare plans and specifications for such improvement, and also estimates of the work to be done and the probable cost thereof, and the City Engineer did prepare such plans, specifications and estimates and did file them in the office of the City Auditor of the City of Portland on the 21st day of January, 1911; and subsequently the said City Council approved the said plans, specifications and estimates and determined the boundaries of the district benefited and to be assessed for such improvement, and on the 8th day of February, 1911, the said Council adopted a resolution, being its resolution numbered 3031, declaring its purpose to make the said improvement, describing the same as Hassam pavement, and

adopting such engineer's estimate of the probable cost thereof and also defining the boundaries of the assessment district to be benefitted and assessed therefor, and notices were published and posted by the officers of the said City in the manner and form required by the City Charter and due proofs of the publication and of the posting thereof were filed with the Auditor of said City. That thereafter the Council of the said City adopted its ordinance numbered 22,941, providing for making said improvement, and authorizing the letting of a contract for the same conforming in all particulars to the plans and specifications previously adopted as aforesaid, and to the provisions of said ordinance numbered 21,172.

That the plans and specifications and the said ordinances require the use of pavements and structures which combine all of the inventions claimed by your orators under the said patents.

That no remonstrance or petition against the said improvement was filed, and the Mayor of the said City approved the said ordinance and the Auditor of the said City was directed to advertise for bids and did advertise for bids for said work, and that the defendant Consolidated Contract Company offered a bid and the contract was awarded by the City of Portland to the said defendant Consolidated Contract Company and was entered into between the City of Portland and the said defendant for the performance of the said work and the making of the said improvement, a substantial copy of which said contract is as follows:

"This Agreement, made this 17th day of May, A. D. 1911, by and between Consolidated

Contract Co., a corporation (hereinafter called the Contractor), and The City of Portland, by its Executive Board (hereinafter called said City),

WITNESSETH: That the Contractor, for the consideration hereinafter named, does hereby agree to furnish the material and perform the labor necessary or required under the provisions of Ordinance No. 21172 and Ordinance No. 22941 of said City, and the plans and specifications of the City Engineer of said City, for the improvement of Commercial Street from the north line of Skidmore Street to the south line of Killingsworth Avenue, and to complete said improvement and all work thereon in a skillful, workmanlike and substantial manner and to the satisfaction of the Executive Board of said City, on or before the 17th day of October, A. D. 1911; said work to be performed and completed in strict accordance with the provisions and requirements of the Charter of said City and Ordinance of said City No. 21172 and No. 22941, and the plans and specifications of the City Engineer on file in the office of the Auditor of said City, which charter provisions, ordinances, plans and specifications are hereby referred to and made a part of this contract; and the Contractor hereby agrees to perform all of the work provided by this contract in such good, skillful and substantial manner that no repairs shall be required to said improvement for a period of five years after its completion and acceptance by said City, and if, during said period, any defects shall appear in said improvement which are attributable in any manner to defective materials or workmanship, the Contractor hereby undertakes and guarantees to repair such defects

at his own expense, and when so ordered by the Executive Board of said City; and said Contractor hereby further undertakes and guarantees to hold said City, and its officers, free and harmless from all loss or damage that may result from carelessness or negligence in the performance of said work, and to assume the entire responsibility for such loss or damage.

The said work shall commence within ten days after the awarding of this contract and shall be prosecuted with such vigor that all work embraced in this contract shall be entirely completed by the 17th day of October, 1911;

It is hereby further agreed that in view of the character of the work to be done, said City will suffer damages as provided for in Ordinance No. 19745 of said City (which ordinance is hereby referred to and made a part of this contract), for each and every day that the completion of said work is delayed beyond the 17th day of October, 1911; and it is further agreed that in case said work shall not be completed on or before said date, the Contractor shall pay to said City, as fixed and liquidated damages, the amount provided by said Ordinance No. 19745, for each and every additional day required to complete said work, which damages shall be retained out of any money due, or to become due, under this contract.

The said work shall be performed under the personal supervision of the Contractor and no part of this contract, nor any interest therein, shall be sublet, assigned or transferred without the written consent of said City, by its Executive Board, and no such written consent shall release the Contractor from any obligation, either to said City, or to

the persons employed by any sub-contractor, and all sub-contractors shall be considered merely as employes of the Contractor and may be discharged by said City for incompetency, neglect of duty or misconduct. The City Engineer of said City shall decide all questions which may arise between the parties hereto relative to the true intent and meaning of any of the provisions or stipulations contained in this contract, or the amount, quantities, character or classification of the work performed by the Contractor under this contract, and his decision thereon shall be final and binding upon the Contractor, subject only to modification or reversal by the Executive Board of said City. The Contractor further agrees to dismiss, at the request of said City Engineer, any sub-contractor, foreman, workman, or other employe, whom either said City Engineer or the Contractor shall deem unfit for the duties assigned to him, or who shall be guilty of slighting work, disobedience of orders, improper or disorderly conduct; and the Contractor shall not again employ any person so dismissed from the work, or suffer him to be so employed.

Whenever, in the opinion of said City Engineer, the work is not being prosecuted by the Contractor with sufficient vigor to insure its completion within the time specified in this contract, or if the character of the work or materials is not in accordance with the Charter, ordinances, plans and specifications above referred to, the said City Engineer may serve written notice on the Contractor to at once put on additional forces of men and teams, or to use such appliances or tools, or to cause such improvement in the character of

the work or materials used therein, as may be required, in order that the Contractor may conform to the stipulations of this agreement and said Charter, ordinances, plans and specifications; and if, at the expiration of five days after such notice is given (which notice may be served upon the Contractor in person, or upon some person engaged in the work representing him), he shall have failed to comply with said notice, said City may immediately take full control of the whole or any portion of the work and complete the same, and of all tools, teams, machinery, materials and other outfit and appliances belonging to the said Contractor and in use on said work; employ such additional men and teams, and use such additional appliances, tools and materials as may, in the judgment of said City Engineer, be necessary or requisite to complete the work in the time and manner specified herein. If, upon the completion of the work by said City, the cost thereof is found to be less than the prices herein agreed to be paid to the Contractor, the difference between the actual cost and the contract price shall be paid to the Contractor, which final payment shall be made within a reasonable time after the work is completed. If, however, the actual cost of the work so done shall exceed the cost of the same at the prices herein specified, the Contractor agrees that he will, on demand, repay to said City the amount expended by it in excess of the cost of the work at the prices named herein, and such excess of cost shall be recoverable on the bond of the Contractor, hereinafter mentioned. None of the foregoing provisions shall be construed to require said City to complete the work, nor to waive or in any way

limit or modify the provisions of this contract relating to the fixed and liquidated damages suffered by said City on account of the failure of the Contractor to complete said work within the time herein prescribed.

In consideration of the faithful performance of the agreements made herein by the Contractor, said City hereby agrees to pay the Contractor, upon the completion of said improvement and its approval and acceptance by the Executive Board, the amount due under this contract, computed upon the corrected estimate of the City Engineer at the unit prices named in the proposal of the Contractor, a copy of which proposal is embodied in and made a part of this contract. Such payment shall be made by warrants drawn on the special assessment fund which may be collected in the City Treasury for that purpose. The following is a copy of the proposal of the Contractor:

PORTLAND, Oregon, Apr. 28, 1911.

TO THE EXECUTIVE BOARD:

The undersigned proposed to furnish material and perform the labor necessary for the improvement of Commercial Street from North line of Skidmore Street, to south line of Killingsworth Ave. in the manner provided by Ordinance No. 22941 at the unit prices set opposite the different items of material and work as follows, to-wit:

Items.		Dollars.	Cents.	Total.
Excavation—Earth,	per cubic yard		80	$1,840.80
Excavation—Old Macadam,	per cubic yard			
Embankment—Earth,	per cubic yard		10	10
Embankment—Crushed rock,	per cubic yard	2	50	2.50
Artificial Stone Sidewalk,	per square foot		12	358.08
Artificial Stone Curb,	per lineal foot		40	198.96
Wood Sidewalk, 6 ft. wide without curb,	per lineal foot			
Wood Sidewalk...feet wide,	per lineal foot			
Wood Curb,	per lineal foot			
Wood Crosswalk—New,	per lineal foot			
Wood Crosswalk—Relay,	per lineal foot			
Box Gutter—Wood,	per lineal foot			
Box Gutter—Wood, open as per plans,	per lineal foot			
Stone Gutter,	per lineal foot			
Stone Block Header, double row,	per lineal foot			
Wood Header,	per lineal foot		15	40.65
Cast Iron pipe 6" diam.,	per lineal foot		75	37.50
¾-inch pipe for water service connections,	per lineal foot		60	144.00
Vitrified Pipe, 8-inch diameter, surface drainage,	per lineal foot		60	66.00
Vitrified Pipe, 6-inch diameter, sewer service connection,	per lineal foot		50	450.00
Inlets,	each	25	00	175.00
"Y" Branches, 6-inch diameter,	each	1	00	24.00
Brick Cutter,	per square yard			
Concrete Gutter, 2 feet wide,	per square yard			
Bitulithic Pavement,	per square yard			
Asphalt,	per square yard			
Vitrified Brick Pavement, exclusive of foundation,	per square yard			
Concrete Pavement,	per square yard			
Hassam Pavement,	per square yard	1	75	23,272.90
Stone Block Pavement, exclusive of foundation,	per square yard			
Concrete in Track, 6 inches thick,	per square yard			
Concrete, 6 inches thick,	per square yard			
Macadam,	per cubic yard			
Gravel,	per cubic yard			
Concrete Retaining Wall, as per plans,	per cubic yard			
Iron Guard Fence,	per lineal foot			
Lumber, B. M.,	per M			
Clearing and Grubbing,	Total			26,610.49

And I hereby agree that in case I am the lowest bidder for such work and this, my bid, is rejected for informality, that it shall be optional with the City of Portland either to award said contract to the next highest bidder whose bid is found to be regular, or to readvertise for said work. And in case said City of Portland determines to readvertise for said work, I agree that the expense of such readvertisement shall be borne by me, and the said City of Portland shall have the right to cash the check accompanying this bid, and out of the proceeds thereof to pay for such readvertisement, and the balance remaining after paying for such readvertisement is to be returned to me.

CONSOLIDATED CONTRACT COMPANY,
By J. H. JOHNSON, President,
Contractor.

It is expressly agreed that this contract is upon the condition that said Contractor will look alone for payment for the material and work above contracted for, to the special assessment fund created by assessment upon the property benefited by such improvement collected and paid into city treasury for that purpose, and to the owners of the real property within the assessment district, and the Contractor shall in no event require said City, or any of its officers to pay the same, excepting out of such special fund so assessed and collected into the city treasury for such purpose, nor to seek to enforce the payment of the same, or any part thereof, against said City, or any of its officers, by legal process or otherwise, or out of any other funds, or in any manner otherwise than as herein provided.

It is hereby agreed by the Contractor that this contract is subject to the provisions of the

Charter of said City and of Ordinance No. 9183 of said City, providing for the protection of sub-contractors, material, men, laborers and mechanics furnishing labor or material under this contract.

For the faithful and punctual performance of this contract the Contractor hereby agrees to furnish a good and sufficient bond in the penal sum of $26,610.49 to be approved by the Mayor of said City, and having as surety thereon some surety company authorized to do business in the State of Oregon, or having personal surety or sureties thereon to be approved in the same manner, and further indemnifying said City against all claims or liens for labor, work or material on account of all sub-contractors, material men, mechanics and employes furnishing labor or materials under this contract, or in the improvement specified in this contract.

IN WITNESS WHEREOF, The parties above named have caused this agreement to be executed in duplicate on the day and year first above written.

[CORPORATE SEAL]

CONSOLIDATED CONTRACT COMPANY [SEAL]

J. H. JOHNSON, President [SEAL]

E. G. TITUS, Secretary [SEAL]

THE CITY OF PORTLAND [SEAL]

By JOSEPH SIMON,
Chairman of the Executive Board of the City of Portland.

Executed in presence of:

.....

.....

(Endorsed:—Letter C, Page 64—CONTRACT—CONSOLIDATED CONTRACT CO., Contractor for the improvement of COMMERCIAL STREET from north line of Skidmore St. to south line of Killingsworth Ave.

Form Approved,
FRANK S. GRANT,
City Attorney.
By H. M. TOMLINSON,
Deputy.

Filed May 20, 1911,
A. L. BARBOUR,
Auditor of the City
of Portland,
By E. W. JONES,
Deputy.

That the said contract was duly executed by the said defendant Consolidated Contract Company by J. H. Johnson, its president and E. G. Titus, its secretary, and by the City of Portland by Joseph Simon, Chairman of the Executive Board of said City, under date the 17th day of May, 1911, and was duly filed with the Auditor of the said City of Portland on the 20th day of May, 1911, where it still remains of record. And your orators pray that copies of the said proceedings, including the said resolutions, ordinances, plans, specifications and estimates and said contract herein referred to, may be deemed and taken as a part of this bill and that your orators have leave to pro-

duce authenticated copies thereof and to refer to the same as part of this bill.

That in accordance with the terms and requirements of the said contract and the charter and ordinances above referred to, the said defendant Consolidated Contract Company executed its bond to the said City of Portland, with the said Pacific Coast Casualty Company, defendant, as surety thereon, in the penal sum of $26,610.49, a substantial copy of which said bond is as follows:

PACIFIC COAST CASUALTY COMPANY

Head Office, San Francisco, California

Know All Men By These Presents, That we, CONSOLIDATED CONTRACT COMPANY, as principal, and the PACIFIC COAST CASUALTY COMPANY, a corporation, organized under the laws of the State of California, and authorized to act as surety under the laws of the State of Oregon, as surety, are held and firmly bound unto the City of Portland in the penal sum of TWENTY-SIX THOUSAND SIX HUNDRED AND TEN AND 49/100 DOLLARS ($26,610.49), lawful money of the United States, for the payment whereof well and truly to be made, we, and each of us, jointly and severally, bind ourselves, our and each of our heirs, executors, administrators, successors and assigns, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH, That whereas the above bounden principal CONSOLIDATED CONTRACT COMPANY, did on the 17th day of May, A. D. 1911, enter into contract with the City of Portland for the improvement of COMMERCIAL STREET, FROM THE NORTH

LINE OF SKIDMORE STREET TO THE SOUTH LINE OF KILLINGSWORTH AVENUE, according to the plans and specifications therefor, and in accordance with the provisions of Ordinances No. 22944 and No. 14253, as amended, of the City of Portland, and in compliance with the provisions of Ordinance No. 9183 and the Charter of the City of Portland.

NOW, THEREFORE, if the said principal shall well and faithfully perform and observe each and every of the covenants and conditions in said contract contained, and perform all of the work embraced by said contract in such good, skillful and substantial manner that no repairs shall be required to said improvement for a period of FIVE years after its completion and acceptance by said City, and if said principal shall, during said period, repair, at its own cost and expense and when so ordered by the Executive Board of said City any and all defects that may appear in said improvement which are attributable in any manner to defective material or workmanship, and further indemnify and save harmless said City against all claims or liens for labor, work or material on account of all sub-contractors, material, men, laborers or mechanics furnishing labor, work or material under said contract, and fully secure and pay the just claims of all laborers, material men, and sub-contractors, employed by them thereunder, then this obligation shall be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the said principal CONSOLIDATED CONTRACT and the said surety has caused these presents to be signed by its duly

authorized officer and its corporate seal to be hereto attached this 17th day of May, 1911.

CONSOLIDATED CONTRACT COMPANY, [SEAL]
J. H. JOHNSON, President, [SEAL]
[CORPORATE SEAL] E. G. TITUS, Secy. [SEAL]
SEELEY & Co.,
City Agents

PACIFIC COAST CASUALTY COMPANY
By PHILLIP GROSSMAYER,
[CORPORATE SEAL] Attorney-in-Fact.

(Endorsed) — C-64 — 199.56 — CONTRACT BOND CONSOLIDATED CONTRACT COMPANY, Contractor for improvement of COMMERCIAL STREET, From Skidmore Street To Killingsworth Ave.

FORM APPROVED
Frank S. Grant, City Attorney
By.....
Deputy

Approved—May 20—1911
Joseph Simon
Mayor

Filed—May 20, 1911
A. L. Barbour
Auditor of the City of Portland
By E. W. Jones, Deputy

PACIFIC COAST CASUALTY COMPANY
PETTIS-GROSSMAYER CO.,
General Agents,
311-312-313-314-315 Board of Trade Building
Portland, Oregon.

Which said bond your orators pray may be deemed and taken as a part of this bill and to the original or a duly authenticated copy thereof now in your orators' possession and in court to be produced, your orators pray leave to refer.

XXVII.

And your orators further aver that under and by the terms of the said contract and bond and the said ordinances, the said defendants have contracted and agreed and undertaken to and are actually proceeding to make, use and sell the same pavement and structures that are the inventions described in and claimed by your orators under their three said letters patents number 819,652, number 861,650 and number 851,625, embodying and conjointly using in one and the same structure the several inventions covered by the said patents and claimed by your orators, and have entered upon said Commercial Street and have begun to lay down the said pavement thereon.

XXVIII.

And your orators aver that other proceedings are pending before the municipal officers of the City of Portland for the improvement of streets with Hassam pavement embodying and necessitating the use of the inventions claimed by your orators under the said patents, and that it is the desire of the City of Portland to advertise for and receive bids for other contracts for such improvements, but that the defendants claim the right to, and threaten to and will, unless restrained,

bid upon and offer to do and perform such work, and enter into contracts therefor. That your orator, Oregon-Hassam Paving Company, on account of its being the sole licensee under the said patents having the exclusive right to make, use and sell the said inventions in said City, and because of its investment and expenditures, in introducing the use of said pavement and in the necessary plant and equipment for doing the said work, as herein above shown, is able and ready to undertake all such work. That because of said wrongful claims and threats of the defendants and the uncertainty of the officers of the said City occasioned thereby as to the rights of bidders to enter into such contracts and to perform the same and to make use of and to sell the said pavements and artificial structures, the said officers will decline to proceed or to let contracts for Hassam pavement or to carry on any improvement that involves the use of the said pavements and artificial structures, so that your orators will lose the opportunity of getting such work, and their plant and equipment will be idle, whereby your orators suffer great, special and irreparable damage and injury.

XXIX.

And your orators further aver that the infringement above complained of by the defendants is a great and continuing injury to them; that said infringement is interfering with the business of making, selling and using, and licensing others to make, use and sell, pavements and artificial structures described and claimed in said letters patent, numbers 819,652, 861,650 and

851,625, and your orators further aver that unless the defendants are restrained by writ of injunction issuing out of this Court, the said defendants will continue to infringe said patents and will induce and lead others to infringe said patents and thereby will cause irreparable injury to your orators' aforesaid rights.

YOUR ORATORS THEREFORE PRAY your Honors to grant unto your orators a preliminary and also a permanent writ of injunction issuing out of and under the seal of this Hororable Court, directed to the said Consolidated Contract Company and the said Pacific Coast Casualty Company, and strictly enjoining them, and each of them, their agents and employees, not to make, use or sell, or cause to be made, used or sold, any pavement or artificial structure which will contain or employ the inventions covered and secured by the claims of said letters patent numbers 819,652, 861,650 and 851,625, or any of them, and especially enjoining the defendants, and each of them, and their agents and employees, not to make, use or sell, or cause to be made, used or sold, upon Commercial Street in the City of Portland, any pavement or artificial structure which will contain or employ the said inventions or any thereof.

AND YOUR ORATORS FURTHER PRAY that the defendants, and each of them, by a decree of this Court, may be compelled to account to and pay to your orators, all the profits which they may have derived from any making, using or selling of any pavements or artificial

structures covered and secured by said letters patent or any of them, and that also the defendants and each of them be decreed to pay all damages which your orators have incurred or shall incur upon account of the said defendants' infringement of the said several letters patent numbers 819,652, 861,650 and 851,625 with such increase thereof as shall seem meet.

YOUR ORATORS FURTHER PRAY that the defendants be decreed to pay the cost of this suit and that your orators may have such other and further relief as the equity of the cause or the statutes of the United States require and to this Court may seem just.

TO THE END THEREFORE that the defendants may, if they can, show why your orators should not have the relief prayed, it is prayed that the defendants, according to the best and utmost of their knowledge, remembrance, information and belief, make full, true, direct and perfect answer to the matters hereinbefore stated and charged, but not under oath, answer under oath being hereby expressly waived; and to the end, therefore, that your orator may have such recovery and relief, may it please your Honors to grant unto your orators, not only a writ or writs of injunction conformable to the prayer of this bill, but also a writ of subpœna *ad respondendum* issuing out of and under the seal of this Horonable Court and directed to the said defendants Consolidated Contract Company and Pacific Coast Casualty Company and commanding them and each of them to appear before this Court

then and there to answer this bill and to abide by such decree herein as to this Court shall seem just.

HASSAM PAVING COMPANY,
By W. A. LUEY.

OREGON HASSAM PAVING COMPANY,
By B. ASSMAN,
Secretary.

CAREY AND KERR,
1410 Yeon Building,
Portland, Oregon,
Solicitors for Complainants.

LOUIS W. SOUTHGATE,
339 Main Street, Worcester, Mass.,
Of Counsel for Complainants.

STATE OF OREGON, }
County of Multnomah, } ss.:

B. ASSMAN, being duly sworn, deposes and says that he is the Secretary of OREGON HASSAM PAVING COMPANY, one of the complainants above named; that he has read the foregoing amended bill of complaint and knows the contents thereof and that the same is true of his own knowledge, except as to the matters therein stated to be alleged on information and belief, and as to those matters he believes it to be true.

B. ASSMAN.

Subscribed and sworn to before me this 11th day of April, 1912.

G. C. FRISBIE,
[NOTARIAL SEAL.] Notary Public for Oregon.

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF OREGON.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation, Complainants, vs. CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation, Defendants.	IN EQUITY. ANSWER.

TO THE JUDGES OF THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF OREGON:

The Consolidated Contract Company, and the Pacific Coast Casualty Company, both defendants above named for answer to complainant's amended Bill of Complaint filed herein, admits, denies and alleges as follows, to wit:

I.

Admit that the HASSAM PAVING COMPANY is a corporation duly organized and existing under the laws of the State of Massachusetts, with its principal place of business in the City of Worcester, Massachusetts; that the OREGON HASSAM PAVING COMPANY is a corporation created and existing

under the laws of the State of Oregon, and having its principal place of business in the City of Portland; that the defendant, Consolidated Contract Company, is a corporation duly organized and existing under the laws of the State of Oregon, and a resident of said State; that the defendant, Pacific Coast Casualty Company, is a corporation organized and existing under the laws of the State of California and a resident of that State with an office in and engaged in business within the State of Oregon.

II.

Defendants deny that prior to the 7th day of June, 1905, or at any other time, one Walter E. Hassam was the sole or original or first or any inventor of a certain or any new or useful invention entitled "Pavement and Process of Laying the Same," a description of which is to be found in the letters patent issued therefor by the Government of the United States, or otherwise, or at all.

III.

Deny that the said alleged pavement or process of laying the same was a new or useful invention and was not known nor used by others in this country before the alleged invention or alleged discovery thereof by the said Hassam, or which was not patented nor described in any printed publication in this or any foreign country before the alleged invention and discovery thereof by the said Hassam, or more than two years before his application for United States Letters Patent therefor, or that at the time of his application

for United States Letters Patent therefor, as set out in complainants' bill of complaint, had not been in public use or on sale in the United States for more than two years or was not patented or caused to be patented by him, or his legal representatives, or assigns, in any foreign country, or upon application which was filed more than twelve months prior to the filing of his said application in this country, nor that the same had not been abandoned by him.

IV.

Deny that the said Hassam was the original or first inventor of said or any paving or process of laying the same; that as to whether or not the said Hassam on the 7th day of June, 1905, or at any other time, or at all, duly or regularly filed, or otherwise filed, in the Patent Office of the United States, application in writing praying for the granting and issuance to him of letters patent of the United States for the same, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

That as to whether or not that prior to the alleged granting and issuing of any patent therefor the said Hassam for value received, or at all, did by an instrument in writing under his hand and seal duly executed and witnessed or otherwise, or at all, sell, or assign, or transfer unto one Charles K. Pevey of Worcester, County of Worcester, State of Massachusetts, an undivided one-half interest or any interest in or to the said alleged invention or in which said Hassam in or by said alleged assignment did

request the Commissioner of Patents to issue such patent as might be granted upon such application, or any patent to the said Walter E. Hassam and Charles K. Pevey, or either of them, jointly or otherwise; or as to whether or not such alleged assignment in writing was filed and recorded in the Patent Office of the United States prior to the granting of any issuance of patent for said invention, or at any other time, or at all, these defendants have no knowledge or information sufficient to form a belief, and therefore deny the same.

That as to whether or not after proceedings duly or regularly had or taken in the matter of said alleged application on May 1, 1906, or at any other time, letters patent of the United States bearing date on that day, or any other date, and numbered 819,652, or any other number were granted or issued and delivered by the Government of the United States to said Walter E. Hassam and Charles K. Pevey, jointly or otherwise, whereby there was granted to them, or either of them, or their heirs or assigns, for the term of 17 years, from the first day of May, 1906, or otherwise, the sole or exclusive or any right, liberty or privilege to make, use or vend the said alleged invention throughout the United States of America, or the territories thereof, or elsewhere, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

VI.

That as to whether or not the said alleged letters patent of the United States were issued in due form of

law, or otherwise, in the name of the United States, or under the seal of the Patent Office of the United States, or were signed by the Commissioner of Patents of the United States; or as to whether or not prior to the issuance thereof, all proceedings were had and taken which were required by law to be had and taken prior to the issuance of letters patent for new and useful inventions, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

VII.

That as to whether or not that before the alleged infringement complained of in complainants' complainant said Walter E. Hassam and said Charles K. Pevey, or either of them, by an instrument in writing, or otherwise, duly signed or sealed or delivered by them, and recorded in the United States Patent Office, did sell, or assign, or transfer to the Hassam Paving Company, all of the right or title or interest in or to said alleged invention, or in or to said alleged letters patent No. 819,652, alleged to have been obtained thereon, together with all right, claims or demands, or cause of action for past infringement of said alleged letters patent; or as to whether or not ever since the said alleged execution and delivery of said alleged assignment, the said Hassam Paving Company has been or still is the sole or exclusive or any owner of said alleged letters patent, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

VIII.

Defendants deny that prior to the 30th day of November, 1906, or at any other time, or at all, the said Walter E. Hassam was the sole original or first or any inventor of a certain or new or useful invention entitled, "Artificial Structure and Process of Making the Same", as shown or set forth in a certain patent alleged to have been issued therefor by the Government of the United States referred to in Paragraph VIII of complainants' complaint, or otherwise, or at all.

IX.

Deny that said artificial structure or process of making the same was a new or useful invention which was not known or used by others in this country before the alleged invention and discovery thereof by the said Hassam, or which was not patented nor described in any printed publication in this or any foreign country before the alleged invention and discovery thereof by the said Hassam, or more than two years before his alleged application for United States patent therefor; nor at the time of his said alleged application for United States letters patent therefor, as set forth in complainants' complaint, the same had not been publicly used or on sale in the United States for more than two years, nor that the same is not patented or caused to be patented by him or by his legal representatives or assigns in any country upon an application which was filed more than twelve months prior to the filing of his said alleged application in this country, or that the same had been abandoned by him.

X.

Deny that the said Walter E. Hassam was the original or first inventor of said artificial structure and process of making the same; that as to whether or not on the said 30th day of November, 1906, the said Hassam duly or regularly filed in the Patent Office of the United States an application in writing praying for the granting and issuance to him of letters patent of the United States for the same; or as to whether or not that prior to the granting and issuance of any patent therefor, the said Hassam for value received, or otherwise, did by an instrument in writing under his hand and seal, duly witnessed and executed, sell, or assign or transfer unto the Hassam Paving Company, all or any of the right, title or interest in or to said alleged invention, or did in or by said alleged assignment request the Commissioner of Patents to issue such patents as might be granted upon said application to said Hassam Paving Company; or as to whether or not said alleged assignment in writing was filed or recorded in the Patent Office of the United States prior to the granting or issuance of any patent for said alleged invention, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XI.

That as to whether or not on the 30th day of July, 1907, or at any other time letters patent of the United States bearing date as of that day, or any other date, and numbered 861,650, or any other number were

granted or issued or delivered by the Government of the United States to the Hassam Paving Company, granting it, or its legal representatives or assigns for the term of 17 years from said 30th day of July, 1907, the sole or exclusive right, liberty or privilege to make, or use or vend the said alleged invention throughout the United States of America, or elsewhere; or as to whether or not that ever since the alleged issuance of said letters patent to the said Hassam Paving Company it has been or still is the sole or exclusive or any owner of said letters patent, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XII.

That as to whether or not said alleged letters patent of the United States were issued in due form of law in the name of the United States, or under the seal of the Patent Office of the United States, or was signed by the Commissioner of Patents of the United States; or as to whether or not prior to the issuance therefor, all proceedings were had or taken which were required by law to be taken, prior to the issuance of letters patent for new and useful inventions; or whether or not said letters patent are ready in court to be produced by complainants, or a copy thereof, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XIII.

Deny that prior to the 14th day of November, 1906, or at any other time the said Walter E. Hassam was

the sole or original or first or any inventor of a certain new or useful invention entitled, "Process for Laying Pavement," as described in the letters patent issued therefor by the Government of the United States, or otherwise, or at all.

XIV.

Deny that said alleged process for laying pavement was a new or useful invention which was not known or used by others in this country before the alleged invention and discovery thereof by the said Hassam, or that the same was not patented or described in any printed publication in this or any foreign country before the alleged invention and discovery thereof by the said Hassam for more than two years before his alleged application for United States letters patent therefor, as alleged in complainants' bill of complaint; or that the same had not been publicly used or on sale in the United States for more than two years, or was not patented nor caused to be patented by him, or by his legal representatives in any foreign country upon any application in this country; or that the same had not been abandoned by him.

XV.

Deny that the said Hassam was the original, or first or any inventor of said process for laying pavement; and as to whether or not the said Hassam did on the 14th day of November, 1906, or at any other time, duly or regularly file in the Patent Office of the United States an application in writing praying

for the granting and issuance to him of letters patent of the United States for the same; or as to whether or not that prior to the granting and issuing of any patent therefor, the said Hassam for value received, did by an instrument in writing, under his hand and seal duly witnessed and executed, sell, or assign or transfer to the Hassam Paving Company all or any of the right, title or interest in or to the said alleged invention; or as to whether or not the said Hassam did in or by said assignment request the Commissioner of Patents to issue such patent as might be granted upon such application to the Hassam Paving Company; or as to whether or not said assignment in writing was filed and recorded in the Patent Office of the United States prior to the granting or issuance of any patent for said alleged invention, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XVI.

That as to whether or not after proceedings were duly and regularly had and taken in the matter of the said alleged application on April 23rd, 1907, or at any other time, letters patent of the United States, bearing date on that day, or any other day, and numbered 851,-625, or any other number, were granted or issued and delivered by the Government of the United States to the Hassam Paving Company wherein and whereby there was granted to it, or its assigns, or legal representatives, for the term of 17 years, or any other period, from the said 23rd day of April, 1907, the sole or

exclusive right, liberty or privilege to make or use or vend said invention throughout the United States of America, or the territories thereof; or as to whether or not ever since the issuance of said letters patent, the Hassam Paving Company are still the sole or exclusive or any owner or holder of said alleged letters patent, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XVII.

That as to whether or not said letters patent of the United States were issued in due form of law or in the name of the United States, or under the seal of the Patent Office of the United States, or were signed by the Commissioner of Patents of the United States; or as to whether or not prior to the issuance thereof all proceedings were had or taken which were required by law to be had and taken prior to the issuance of letters patent for new or useful inventions, there defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XVIII.

Deny that all of said alleged inventions described in and claimed by said alleged three letters patent No. 819,652, No. 861,650 and No. 851,625, respectively, or any of said patents, are capable of embodiment or conjoint use in one and the same structure, or have been so embodied and conjointly used by complainant, or will be so embodied and conjointly used by the de-

fendant, Consolidated Contract Company in its alleged threatened infringement complained of in complainants' bill of complaint.

XIX.

That as to whether or not the Hassam Paving Company was organized particularly or at all to exploit or develop said alleged inventions, or that it made a large investment for this purpose, or that it, or its licensees have made or constructed large amounts of pavements which in construction or mode of operation embody the alleged invention and discovery described and claimed in said three letters patent No. 819,652, No. 861,650 and No. 851,625, or any of them; or as to whether or not said alleged inventions or discoveries have been recognized throughout the United States, or elsewhere as a high or any order of excellence, or as to whether or not the pavement constructed thereunder has been adopted as the standard by many or any municipalities or any highway commissions, or as to whether or not the rights covered by said alleged several patents have been acquiesced in generally, or otherwise by the public throughout the United States, or elsewhere, with the exception of these defendants, or as to whether or not the alleged exclusive right to control the same has been or still is of great benefit or advantage to complainant, or is the basis of a large and substantial business, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XX.

That as to whether or not the Hassam Paving Company on or about the 16th day of July, 1909, or at any other time, gave and conveyed unto the Oregon Hassam Paving Company, the exclusive right to use and make said alleged improvements in pavements and foundations, or processes of laying the same according to the three alleged several letters patent, during the term beginning the 16th day of July, 1909, or any other time, or ending with the expiration of the term of said letters patent, or any other time, in the State of Oregon, or a strip in the southern part of the State of Washington, as described in complainant's bill of complaint, upon the payment of certain license fees or royalties, or upon certain or any conditions contained in said alleged license agreement, or upon any other conditions, or at all; or as to whether or not the said Oregon Hassam Paving Company became the exclusive or any licensee to use and make under said alleged patents in this district said alleged or any pavement, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XXI.

That as to whether or not the Oregon Hassam Paving Company was organized particularly or otherwise to exploit or develop said alleged inventions in this district, or as to whether or not it has made a large or any investment for this purpose, or has made or constructed large amounts of pavements which in construction and mode of operation embody the alleged invention or dis-

covery described and claimed in said three letters patent, No. 819,652, No. 861,650 and No. 851,625, or either of them, or as to whether or not the said alleged inventions or discoveries have been recognized in this district as of a high order of excellence, or that the pavement constructed thereunder has been put in many streets in this district, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

Deny that the Oregon Hassam Paving Company has the exclusive right to use or make pavements under said alleged patent; that as to whether or not said alleged right has been or still is of great or any benefit or advantage, or is the basis of a large and substantial business in this district; or as to whether or not in the City of Portland and State of Oregon, the business of the Oregon Hassam Paving Company has been or is extensive or profitable in laying pavements under said alleged patents; and as to whether or not the said Paving Company has in the City of Portland invested a large or any sum of capital, aggregating many thousands of dollars, or any sum, or sums in advertising or introducing the said pavement, or demonstrating the advantage thereof for municipal use as a street pavement, or in providing the machinery or implements used in laying said pavements, or has taken many contracts from the City of Portland prior to the filing of complainants' bill of complaint herein for the laying of said pavements, or has actually or at all laid or constructed said pavements under said alleged patents upon many or any streets in this City these defendants have no

knowledge or information sufficient to form a belief and therefore deny the same.

That as to whether or not that some or any of the work is now under way or uncompleted or that other pavements have been fully completed, or as to whether or not the City of Portland has now before its various officers, or any of its officers or executive board and council, proceedings for the improvement of many streets or any streets with said pavement, or which proceedings are now pending or uncompleted or which in due course will result in the advertising for bids and letter of contracts for the improvement of many or any streets with said pavement embodying the invention or discovery described in and claimed in said alleged three letters patent No. 819,652, No. 861,650 and No. 851,625, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XXII.

That as to whether or not complainants have affixed upon every or any pavement or artificial structure made by them containing the alleged invention of the three several letters patent, numbered as above, the word "Patented," or any other word, or the day or year the three alleged several letters patent were respectively granted, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

XXIII.

Deny that these defendants, or either of them, well knowing, or at all knowing the premises, are without

license or right or in violation or infringement of said alleged letters patent, or in violation or infringement of any exclusive, or other rights thereunder granted or secured as alleged in complainants' bill of complaint, or since the Hassam Paving Company has claimed to be the exclusive owner of said alleged patents, or since the Oregon Hassam Paving Company has claimed to be the licensee under said alleged patents, or within the period of six years last past prior to the filing of complainants' bill of complaint in the City of Portland, or otherwise, or at all, has infringed each, or any, or all of the claims of each, or any, or all of the said alleged letters patent, or has made or sold, or used, or is now making, or using, or threatening to continue to make, or sell or use pavements or artificial structures lawfully patented or covered or secured by said alleged three several letters patent No. 819,652, No. 861,650 and No. 851,625, or either of them, or that in each or any of said improvements or artificial structures made, sold or used by these defendants, or either of them, all or any of the inventions described in or claimed by the three said several letters patent, were unlawfully conjointly combined or used.

XXIV.

Admit that the defendant, Consolidated Contract Company, since the date of the granting of said alleged letters patent, have been notified that they were infringing the same, but deny that they have continued after such notice to make, or use or sell pavements or artificial structures in infringement of said

alleged three several letters patent, except in the improvement of Commercial Street from the north line of Skidmore Street to the south line of Killingsworth Avenue, in the City of Portland, as hereinafter set forth; and deny that such use was in defiance of complainants' vested rights or any right whatever.

XXV.

Admit that the City of Portland adopted Ordinance No. 21,172, which was entitled, "An Ordinance in relation to the improvement of Streets and declaring an Emergency," on the 27th day of April, 1910.

Admit that in and by said Ordinance, the City of Portland adopted said specifications governing the laying of several kinds of pavement, but deny that any pavement is officially referred to as "Hassam Pavement." And deny that said specifications contain the inventions or any inventions covered or secured by the said three alleged letters patent No. 819,652, No. 861,650 and No. 851,625.

Admit that Section 28 of said Ordinance contains the language set out in quotation on pages 17, 18 and 19 of complainants' amended bill of complaint.

XXVI.

Admit that in September, 1910, the Common Council of the City of Portland directed the City Engineer of said City to prepare plans and specifications for the improvement of Commercial Street from the north line of Skidmore Street to the south line of Killingsworth Avenue; and that the said City Engineer

did prepare such plans and specifications and did file them in the office of the Auditor of the City of Portland on the 21st day of January, 1911; and that said plans and specifications were approved by the City Council and that on the 21st day of February, 1911, the said Council adopted a resolution, being Resolution No. 3031, declaring its purpose to make the said improvement as set forth in Paragraph XXVI of complainants' amended bill of complaint. But as to whether or not the same was described as Hassam Pavement in said Resolution, these defendants have no knowledge or information sufficient to form a belief, and therefore deny the same.

Admit that notices were published and posted by the officers of said City and that thereafter the City Council of said City adopted its Ordinance No. 22,941 providing for making said improvement and authorized the letting of the contract for the same, conforming in all particulars to the plans and specifications previously adopted, as aforesaid, and to the provisions of said Ordinance No. 21,172; but as to whether or not the said plans and specifications, or the said ordinances required the use of pavements, or structures which combined all or any of the alleged inventions claimed by complainants under said alleged patents, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

Admit that no remonstrance or petition against said improvement was filed and that the Mayor of said City approved the said Ordinance alleged in com-

plainants' amended bill of complaint, and the auditor of said City was directed to advertise for bids and did advertise for bids for said work.

That defendant, Consolidated Contract Company, offered a bid and said contract was awarded by the City of Portland to the said defendant, Consolidated Contract Company, and was entered into between the City of Portland and the said defendant, for the performance of the said work and for the making of said improvement, and that the agreement set out on pages 21, 22, 23, 24, 25 and 26 of complainants' amended bill of complaint is a correct copy of said agreement as entered into.

Admit that said contract was duly executed by the parties as alleged and was duly filed with the auditor of the City of Portland on the 20th day of May, 1911, and that it is still of record there, all as alleged in complainants' amended bill of complaint.

Admit that in accordance with the terms and requirements of said contract, and the Charter and Ordinances of the City of Portland, the said defendant, Consolidated Contract Company, executed its bond to the said City of Portland with the said Pacific Coast Casualty Company, defendant herein, as surety thereon, in the penal sum of $26,610.49, and that said bond is as set forth on pages 27 and 28 of complainants' amended bill of complaint.

XXVII.

Deny that in or by the terms of said contract, or bond, or the said ordinance, or any of them, the said

defendants, or any of them, have contracted or agreed, or undertaken to, or are actually, or at all proceeding to make, or use, or sell the same pavement and structures, or any pavement or structures, or the inventions described in or claimed by complainants under their three said alleged letters patent, or are embodying or conjointly or otherwise using in one or the same structures the several or any inventions covered by said alleged patents, or claimed by complainants, or have entered upon said Commercial Street, or have begun to lay the same pavement thereon, save and except as hereinafter set forth.

XXVIII.

That as to whether or not other proceedings are pending before the municipal officers of the City of Portland for the improvement of Streets with Hassam Pavement, embodying or necessitating the use of the alleged inventions claimed by complainants under said alleged patents, or that it is the desire of the City of Portland to advertise for or receive bids for other contracts for such improvements, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

Admits that the defendant, Consolidated Contract Company, will, unless restrained by your Honorable Court, bid upon and offer to do and perform such work and enter into contracts therefor under the plans and specifications as prepared by the City of Portland.

That as to whether or not said Oregon Hassam Paving Company is able or ready to undertake any

or all of such work, these defendants have no knowledge or information sufficient to form a belief and therefore deny the same.

Deny that because of said alleged wrongful claims or threats of defendants, or any of them, or of the alleged uncertainty of the said City occasioned thereby as to the rights of the bidders to enter into such contracts, or perform the same, or to make use of, or sell said pavements, or artificial structures, that said officers will decline to proceed to let contracts for Hassam Pavement, or to carry on any improvement that involves the use of said pavements or artificial structures, or that complainants will lose the opportunity of getting such work, or that their plant or equipment will be idle, or that they will suffer great, or special or irreparable damage or injury thereby.

XXIX.

Deny that the alleged infringement as set forth in complainants' amended complaint by these defendants is a great or continuing or any injury to complainants, or that said alleged infringement is interfering with the business of making, or selling or using or licensing others to make or use or sell pavements or artificial structures described in or claimed by said alleged letters patent Nos. 819,652, 861,650 and 851,625, or either of them; or that, unless these defendants are restrained by right of injury, or otherwise, or at all, they will continue to infringe or have infringed said alleged patents, or will induce or let others infringe

said alleged patents, or will thereby cause irreparable or any injury to complainants.

These defendants for a first further and separate answer and defense allege:

I.

That the "Pavement and Process of Laying the Same," the "Artificial Structure and Process of Making the Same," and "Process for Laying Pavement," mentioned in the amended bill of complaint in Articles II to XVIII, both inclusive, and therein alleged to have been discovered and invented by Walter E. Hassam of Worcester, Massachusetts, and for which it is also therein alleged that letters patent Nos. 819,652, 861,650 and 851,625 were issued embodying the claims and specifications of said alleged discoveries and inventions, and the specifications for pavement and the process of laying the same mentioned in Article XXV of said amended bill and therein alleged to embody the inventions covered and secured by said three several letters patent, have been described and specified in United States Letters Patent granted and issued to persons other than said Walter E. Hassam, or his assigns, and said patents were each and all granted and issued more than two years, and many years prior to the date of said Hassam's alleged invention or discovery and prior to June 7, 1905, being the earliest date on which it is alleged in said amended bill that said Hassam filed his written application in the Patent Office of the United States praying for the granting of letters patent to him to secure his alleged discovery and invention.

II.

That the United States Letters Patent hereinafter mentioned cover and include the claims and specifications described in said three letters patent numbered 819,652, 861,650 and 851,625, mentioned as aforesaid in said amended bill, and the said specifications for pavement and the process for laying the same set forth in Article XXV of said amended complaint, to-wit:

Patent No. 238,706 to John Murphy of Columbus, Ohio, Inventor and Patentee, issued March 8, 1881, and published in Vol. 19 of the Official Gazette, page 590, and described in certified copy of specifications in the Portland Public Library, in the City of Portland, Oregon, under said patent number.

Patent No. 375,273, issued December 20, 1887, to Edward J. De Smedt, Washington, D. C., Inventor and Patentee, published in the Official Gazette, Vol. 41, page 1371, and described in certified copy of specifications in the Portland Public Library in said City of Portland, under said patent number.

Patent No. 381,667, issued December 28, 1887, to George A. Bayard, Bellfonte, Pa., Inventor and Patentee, published in the Official Gazette, Vol. 43, page 4635, and described in certified copy of the specifications in Portland Public Library in said City of Portland under said patent number.

Patent No. 401,752, issued November 19, 1888, to Mordicai Levi, Charleston, W. Va., Inventor and Patentee, published in Official Gazette, Vol. 47, page 413, and described in certified copy of the specifications in Portland Public Library in the City of Portland under said patent number.

Patent No. 413,278, issued October 22, 1888, to Thomas F. Hagerty, San Francisco, California, Inventor and Patentee, published in Official Gazette, Vol. 49, page 452, and described in the certified copy of the specifications in Portland Public Library in said City under said patent number.

III.

That the pavement and process for laying the same as claimed and specified in said three letters patent numbered 819,652, 861,650 and 851,625, and as set forth in said Article XXV of said amended complaint had been described in many printed publications more than two years before and many years prior to said Hassam's alleged invention and discovery as set forth in said amended bill. Among the books and printed publications, in which said alleged invention or discovery of said Hassam is described, in addition to the Official Gazette above mentioned, are the following: March's Thesaurus, Century Dictionary and other dictionaries, under "Grout," "Macadamization."

Encyclopedia Americana, under "Roads and Highways, Improvement of".

Encyclopedia Brittanica, 9th Edition under the title "Roads and Streets".

"Concrete Plain and Reinforced", 2nd Edition, a treatise by Frederick W. Taylor and Sanford E. Thompson.

"Roads and Pavements", by Ira O. Baker, 1st Edition.

IV.

That said Walter E. Hassam was not the original or first inventor of any material and substantial part of the pavement and process for laying the same, described in said three letters patent numbered 819,652, 861,650 and 851,625 mentioned as aforesaid in said amended bill of complaint. Substantially the same pavement and process for laying the same was described and used by John L. Macadam, a Scotch Engineer born in the year 1756 and who died about 1836, the road being known as Macadam road; and the same kind of pavement and process for laying the same, except that asphalt or bitumen instead of Portland cement is used for a binder, has been used in Portland, Oregon, and many other cities by Warren Construction Company for a long time prior to said alleged invention and discovery of said Walter E. Hassam and for more than two years prior to his application for a patent therefor; and said pavement and the process for laying the same as specified in said three patents alleged in said amended bill has been in use in this country and foreign countries for many years and has been within the knowledge of engineers and road makers since a time long prior to said Hassam's alleged discovery or invention.

V.

By reason of the patents issued to persons other than said Walter E. Hassam, or his assigns, as above set forth and the printed publications describing the pavement and the process of laying the same according

to the specifications set forth in Article XXV of said amended bill, and the knowledge and use by persons other than complainants of the pavement and process of laying the same as described in said three patents of complainants long prior to the alleged invention of said Hassam and of the prior state of the art all of which was well known to said Hassam at the time of said Hassam's alleged discovery or invention, the said pavement and process of laying the same, as described in complainants' three patents mentioned in said amended bill was not patentable, for lack of novelty and invention, and said patents are therefore void.

These defendants for a second further and separate answer and defense to complainants' amended bill of complaint filed herein, allege:

I.

That on the 27th day of April, 1910, the City of Portland, through its Common Council, duly adopted an Ordinance, being Ordinance No. 21172 and entitled, "An Ordinance in Relation to the Improvement of Streets and Declaring an Emergency", which said Ordinance was duly approved by the Mayor of said City on the 4th day of May, 1910. That by the said Ordinance the City of Portland adopted specifications governing the laying of all kinds of pavements for streets and sidewalks and the manner of constructing the same and the material to be used for that purpose.

That Section 28 of said Ordinance provides as follows:

> "Section 28. The roadway shall be graded the full width of the roadway down to subgrade

as given by the City Engineer. Said subgrade shall be six (6) inches below the finished surface of the street.

Care must be taken to preserve the proper crown. All soft or springy places not affording a firm foundation shall be dug out and refilled with good earth, gravel or macadam, well rammed in place.

The entire roadbed shall be thoroughly rolled and compacted with a road roller weighing not less than ten tons, to the satisfaction of the City Engineer. Such rolling shall be completed in sections of at least one block and shall be tested and accepted by the City Engineer before any material for the pavements is placed thereon.

Rolling shall be continued until the street is rolled to the satisfaction of the City Engineer.

The thickness of pavement shall be not less than six (6) inches from subgrade to the finished grade of street.

Upon the finished subgrade clean, broken rock, ninety per cent. of amount varying in size from two and one-half (2½) inches to one and one-half (1½) inches, shall be spread to a sufficient depth to bring the surface after rolling to the proper finished grade of the street, which shall be six (6) inches above subgrade.

This rock shall then be thoroughly compacted by rolling with a road roller, giving a compression of not less than 250 pounds per inch width of roller, and shall be firmly bedded and the voids reduced to a minimum, and surface shall conform to grade and contour of the street. Such portions of pavement as it may not be possible to roll shall be thoroughly compressed by tamping.

The voids in the rock shall then be thoroughly

filled with a grout consisting of one part of Portland cement to two parts of sand. This grout shall be sufficiently thin to flow freely, and shall be thoroughly and continuously mixed and poured upon the rock until all the voids are filled and the grout flushes to the surface under the rolling or compression, which shall immediately follow the grouting and shall be continued until no further compacting results.

Upon the surface of the pavement thus prepared shall be placed a very thin layer of peastone, which shall be thoroughly spread and rolled or compressed evenly and smoothly over the entire surface. The peastone layer shall have just sufficient thickness to insure the complete filling of the voids in the pavement surface. Rolling shall continue until the grout flushes to the surface.

After rolling, this surface shall, at the discretion of the City Engineer, be broomed until surplus water is removed and the surface presents a true and even appearance.

Suitable expansion joints shall be provided at the curb or across the streets as the City Engineer may decide necessary and so direct.

A template, the upper edge of which conforms to the contour of the finished grade, shall be placed transversely across the street at the point where the work of each day stops. This template shall be removed before continuing the grouting, care being taken not to disturb the set of the cement next to the template.

All operations shall be carried forward with as much speed as is possible, and in no case shall cement be rolled or compressed or worked after it has taken its initial set.

All paving shall be kept free from traffic for a period of not less than six (6) days after its completion, and longer if necessary in judgment of the City Engineer, before being opened up to the public for use.

The rock for making the concrete shall be the best hard, dark-colored, sound basalt rock, or granite, or equally hard stone, not less than ninety per cent. broken in pieces not larger than two and one-half (2½) inches in the largest diameter, nor smaller than one and one-half (1½) inches in diameter.

The broken rock shall be screened so that all dust, clay, loam, vegetable matter and pieces smaller than one-half (½) inch in diameter shall be removed. The rock shall be thoroughly washed if considered necessary by the City Engineer.

All sand must be clean, coarse and sharp; it must range uniformly from fine to coarse. All must pass a sieve having four meshes per linear inch and not more than ten per cent. must pass a sieve having thirty meshes per linear inch.

In measuring the aggregate, one sack of cement shall be taken as equal to one cubic foot. If barrel cement is used, a barrel shall be taken as four cubic feet."

II.

Section 374 of the Charter of the City of Portland, duly adopted by the legal voters of the City of Portland, in June, 1902, went into effect January 23, 1903, and which is now the Charter of the City of Portland, provides that the Council of said City whenever it may deem it expedient may order the whole or any

part of the streets of the City to be improved and to determine the character, kind and extent of such improvement.

Section 375 of said Charter provides that when the Council shall deem it expedient or necessary to improve any street or streets within the City of Portland, it shall require plans and specifications from the City Engineer for an appropriate improvement, and the estimates of the work to be done and the probable costs thereof. And if the Council shall find such plans, specifications and estimates to be satisfactory, it shall approve the same and shall by resolution declare its purpose of making said improvement.

Section 376 of said Charter provides that the City Engineer within five days from the first publication of said resolution, shall cause notices to be posted at each end of the line of the contemplated improvement.

Section 377 provides that within twenty days from the date of the first publication of the notices required to be published in preceding section, that the property owners may remonstrate against said improvement.

Section 378 of said Charter provides that if no objection or remonstrance be made and filed with the auditor within the time designated, the Council shall be deemed to have acquired jurisdiction to order the improvement to be made, and the Council thereafter, and within three months from the date of the final publication of its previous resolution may, by ordinance, provide for making said improvement which shall conform in all particulars to the plans and specifications previously adopted.

Section 379 of said Charter provides:

"Section 379. Upon the approval of said ordinance by the Mayor, or if the same shall become valid without his approval, the auditor shall present to the Executive Board, at its next regular meeting, a copy of said ordinances, and the estimates, plans and specifications previously prepared by the City Engineer and adopted by the Council. Thereafter the said Executive Board, without delay, shall give notice by publication for not less than five successive days in the city official newspaper, inviting proposals for making said improvement. The Executive Board shall have the power to award the contract or contracts for said improvement and to impose such conditions upon bidders with regard to bonds and securities, and guarantees of the good faith and responsibility of bidders, for insuring the faithful completion of the work in strict accordance with the specifications therefor, and to make all rules and regulations in the letting of contracts that may be considered by said Board as advantageous to the city. Such contract or contracts shall be let to the lowest responsible bidder for either the whole of said improvement or such part thereof as will not materially conflict with the completion of the remainder thereof, but said Board shall have the right to reject any or all proposals received. It shall be the duty of the Executive Board to fix the time in which every such improvement shall be completed and it may extend such time should the circumstances warrant. The said Board shall have power and authority to make all written contracts, to receive and approve all bonds authorized by this section, to provide for

the proper inspection and supervision of all work done under the provisions of this Article, and to do any other act to secure the faithful carrying out of all contracts, and the making of improvements in strict compliance with the ordinance and specifications thereof."

III.

That in the year 1910, and prior to the 27th day of April, of said year, and prior to the passage of said Ordinance No. 21,172, the complainants herein well knowing the provisions of the City Charter of the City of Portland hereinbefore set forth, and well knowing that all contracts for the improvement of streets were under said Charter required to be let to the lowest responsible bidder, and well knowing that all persons were allowed and permitted to bid thereon, solicited and requested the officers, agents and servants of the said City of Portland to incorporate in said Ordinance No. 21,172, Section 28 thereof, hereinbefore set forth, and prepared and furnished to the City Engineer of the City of Portland and to the Common Council of the said City a draft of said Section 28 as the same appears in said Ordinance and as hereinbefore set forth, and without reserving to complainants, or either of them, any royalty upon their alleged patents No. 819,652, 861,650 and 851,625, and thereby gave its consent that the officers and agents of the City of Portland should specify that kind of an improvement and to advertise for and receive bids for the improvement of streets with that kind of an improvement and to let the same to the lowest responsible bidder.

IV.

In the month of September, 1910, the Common Council of the City of Portland, deeming it expedient and necessary to improve Commercial Street from the north line of Skidmore Street to the south line of Killingsworth Avenue in said City, directed the City Engineer of said City to prepare plans and specifications for such improvement and also estimates of the work to be done and the probable cost thereof. The said Engineer did prepare such plans and specifications and estimates and did file them in the office of the City Auditor of the City of Portland on the 21st day of January, 1911, and subsequently the said City Council approved the said plans and specifications and estimates and determined the boundaries of the district benefited and to be assessed for such improvement and on the 8th day of February, 1911, the said Council adopted a resolution, being its Resolution No. 3031, declaring its purpose to make said improvement and describing the same and adopting such Engineer's estimate of the probable cost thereof, and also defining the boundaries of the assessment district benefited and assessed therefor, and notices were published and posted by the officers of said City in the manner and form required by the City Charter and due proofs of the publication and of the posting thereof were filed with the Auditor of said City.

That thereafter the Council of said City adopted its Ordinance No. 22,941, providing for making said improvements and authorizing the letting of a contract for the same conforming in all particulars to the plans

and specifications previously adopted as aforesaid, and to the provisions of said Ordinance No. 21,172.

That no remonstrance or petition to the said improvement was filed and the Mayor of the said City approved said Ordinance and the proper officers of the said City were directed to advertise for bids for said work which said advertisement so published by authority of the City of Portland, reads as follows:

"PROPOSALS FOR IMPROVEMENT OF COMMERCIAL STREET."

"Sealed proposals will be received at the office of the Auditor of the City of Portland, until Friday, April 28, 1911, at 4 o'clock p. m., for the improvement of Commercial Street, from the north line of Skidmore Street to the south line of Killingsworth Avenue, in the manner provided by Ordinance 22,941, subject to the provisions of the charter and Ordinances of the City of Portland, and the estimate of the City Engineer on file.

Bids must be strictly in accordance with printed blanks, which will be furnished on application at the office of the Auditor of the City of Portland. And said improvement must be completed on or before five months from the date of the signing of the contract by the parties thereto.

No proposal or bid will be considered unless accompanied by a check payable to the order of the Mayor of the City of Portland, certified by a responsible bank for an amount equal to ten per cent of the aggregate proposal, to be forfeited as fixed and liquidated damages in case the bidder neglects or refuses to enter into contract and provide a suitable bond for the faithful performance of said

work in the event the contract is awarded to him and the contract for the improvement of the above named street will be awarded to the lowest responsible bidder for the whole of the improvement.

The right to reject any and all bids is hereby reserved."

By order of the Executive Board.

(Signed) A. L. BARBOUR,
Auditor of the City of Portland.

Portland, Oregon, April 22, 1911.

That in pursuance of said proceedings and of said advertisement for bids, the defendant, Consolidated Contract Company, offered a bid for the improvement of said street and it being the lowest responsible bidder, the contract for the improvement of said street was awarded by the City of Portland to said defendant. And a contract was entered into between the City of Portland and said defendant for the performance of said work and the making of said improvement, a substantial copy of which contract appears upon pages 21, 22, 23, 24, 25 and 26 of complainants' amended bill of complaint, and thereafter proceeded to construct said street and to make said improvements in accordance with said plans and specifications.

VI.

That by reason of said complainants herein having solicited and procured the said City of Portland to specify the kind of pavement and the manner of laying the same, as set forth in Section 28 of said Ordinance 21172, well knowing that under the said charter of the City of Portland the said City would be compelled,

if said kind of improvement and the manner of laying the same was specified for the improvement of the street, that the contracts for the improvement thereof would have to be let to the lowest responsible bidder for said improvement the said complainants are therefore estopped by their conduct and acts aforesaid from claiming that the said improvement specified at their request was patented and are estopped from claiming any royalties or damages from these defendants, and are estopped from denying that they had waived their patent right, if any they had, upon such street so improved under said contract by the defendants, Consolidated Contract Company.

WHEREFORE, Defendants pray for a decree of your Honorable Court dismissing complainants' amended bill of complaint as being without equity, and decreeing that defendants recover of and from complainants their costs and disbursements of this suit.

CONSOLIDATED CONTRACT COMPANY,
By E. G. TITUS,
Secretary.

PACIFIC COAST CASUALTY COMPANY,
By PHILLEP GROSSMAYER,
Attorney in Fact.

JESSE STEARNS,
JOHN H. HALL,
Solicitors for Defendants,
515 Railway Exchange.

IN THE

DISTRICT COURT OF THE UNITED STATES,

FOR THE DISTRICT OF OREGON.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation, Complainants. vs. CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation, Defendants.	Replication.

THE REPLICATION OF COMPLAINANTS TO THE ANSWER OF DEFENDANTS:

These repliants, saving and reserving to themselves all, and all manner of advantage of exception to the manifold insufficiencies of the said answer, for replication thereunto say, that they will aver and prove their said bill to be true, certain, and sufficient in the law to be answered unto; and that the said answer of the said defendants is uncertain, untrue, and insufficient to be replied unto by these repliants; without this, that, any other matter or thing whatsoever in the said answer contained, material or effectual in

the law to be replied unto, and not herein and hereby well and sufficiently replied unto, confessed and avoided, traversed or denied, is true; all which matters and things these repliants are and will be, ready to aver and prove, as this honorable Court shall direct; and humbly pray, as in and by their said bill they have already prayed.

Dated May 22, 1912.

CAREY & KERR,
Solicitors for Complainants.

LOUIS W. SOUTHGATE,
Of Counsel.

In the

DISTRICT COURT OF THE UNITED STATES

for the District of Oregon.

Hassam Paving Company, a corporation, and Oregon Hassam Paving Company, a corporation, Complainants, vs. Consolidated Contract Company, a corporation, and Pacific Coast Casualty Company, a corporation, Defendants.	)

Worcester, Mass., June 3, 1912.

Met pursuant to the annexed Notice of Taking Testimony, at the offices of Southgate & Southgate, at 10 A. M.

Present:

Louis W. Southgate, Esq., of counsel for Complainants.

John H. Hall, Esq., of counsel for defendants.

Adjourned by agreement to same place Thursday, June 6, 1912.

WORCESTER, Mass., June 6, 1912, 10 A. M.

Met pursuant to adjournment.

Present—Counsel as before.

Counsel for Complainants offers in evidence a certified copy of letters patent No. 819,652, patented May 1, 1906, on a "Pavement and Process of Laying the Same," and the same is marked, "Complainants' Exhibit No. 1, Hassam First Patent, C. F. W., Notary Public."

Counsel for Complainants offers in evidence a certified copy of United States letters patent No. 851,625, patented April 23, 1907, on a "Process for Laying Pavement," and the same is marked "Complainants' Exhibit No. 2, Hassam Second Patent, C. F. W., Notary Public."

Counsel for Complainants offers in evidence a certified copy of United States letters patent No. 861,650, patented July 30, 1907, on an "Artificial Structure and Process of Making the Same," and the same is marked "Complainants' Exhibit No. 3, Hassam Third Patent, C. F. W., Notary Public."

Counsel for Complainants offers in evidence a copy under seal of the Patent Office, of all assignments of record up to, and including, May 15, 1912, affecting the title of said three several letters patent, and the same is marked, "Complainants' Exhibit No. 4, Assignment of Patents in Suit, C. F. W., Notary Public."

WALTER E. HASSAM, being called as witness on behalf of Complainants, and being first duly sworn by C. Forrest Wesson, Notary Public, testifies as follows:

Q. 1. What is your name, age, residence and occupation?

A. Walter E. Hassam, age forty-six years old, general manager of the Hassam Paving Company, residence #2 Beeching Street, Worcester, Mass.

Q. 2. Are you the Walter E. Hassam in whose name the three letters-patent here in suit were granted?

A. I am.

Q. 3. Please state your experience as a contracting and civil engineer, and particularly your experience which led up to the procuring of these patents.

Objected to by Defendants' counsel as immaterial.

A. I graduated from Norwich University in Vermont in 1887 with degree of Civil Engineer, Master of Science, served sixteen years as Assistant Engineer in the City of Worcester, having charge of the road construction and the water department as an engineer. Three years as Street Commissioner of Worcester, having complete charge of the construction of all the streets, sidewalks, etc., in the City of Worcester. I resigned, I think, June 23, 1906, and since that time have been General Manager of the Hassam Paving Company. During this period I was Engineer and Street Commissioner I devoted my whole time, or nearly my whole time, to the development and processes of improving and building roads.

Q. 4. Your first patent here in suit is dated May 1, 1906. After you secured this patent, please state what steps, if any, you took to introduce and develop the invention thereof into use.

Objected to by Defendants' Counsel as irrelevant and immaterial.

A. I interested some business men of money and formed a company called the "Hassam Paving Company," incorporated in the State of Massachusetts, and immediately started to promote and get work and started construction; also to form and organize companies in other states and license them to lay the Hassam pavement under our patent and have done this to an extent of thirteen or fourteen companies throughout the United States and Canada, one of which is the Oregon Hassam Paving Company of Portland, Oregon.

Q. 5. Will you please produce the contract or license given to the Oregon Hassam Paving Company?

Objected to by Defendants' Counsel as immaterial.

A. I do.

Counsel for Complainants offers the original license produced by the witness in evidence, and the same is marked, "Complainants' Exhibit No. 5, License to Oregon Hassam Paving Company, C. F. W., Notary Public."

Objected to by Defendants' Counsel as immaterial.

Q. 6. I notice that this contract is signed "Hassam Paving Company, By Walter E. Hassam, General

Manager" and that the seal of the Hassam Paving Company is affixed thereto. Is this your signature and the seal of the Hassam Paving Company?

A. It is.

It is stipulated between counsel that the original contract produced by the witness may be withdrawn as an exhibit, subject to inspection nevertheless, at any reasonable time by counsel and may be substituted by a copy.

Counsel for Defendants objects to the contract as irrelevant and immaterial.

Q. 7. Please state generally the character, amount of business and localities of business done by the complainant corporation, Hassam Paving Company, and its licensees since it was organized.

Objected to by Defendants' Counsel as irrelevant and immaterial.

A. We have laid paving in something like sixty cities in the United States and Canada, reaching from Portland, Oregon, to Portland, Maine, and from Victoria, British Columbia, to St. Johns, N. B., laying the Hassam pavement or Hassam foundation with other wearing surface, nearly three million yards of paving. I can give approximately the cities that it has been laid in from memory, but I do not suppose I could give them all without looking at the records.

Q. 8. Will you please state from memory, as near as you can, the cities you referred to in your last answer.

Objected to by Defendants' Counsel as immaterial.

A. Maine: Portland, Biddeford, Lewiston, Westbrook; New Hampshire: Nashua, Manchester; Massachusetts: Gardner, Holyoke, Lynn, Haverhill, Springfield, Lawrence, Southbridge, North Adams, Lowell, Worcester, Brockton, Taunton, Somerville, Cambridge, Beverly, Boston, Newton, Fall River, Watertown, Brighton, Williamstown; Rhode Island: Newport; Connecticut: Derby, Hartford, Waterbury, New Haven, Shelton; New York: Niagara Falls, Mineola, L. I., Troy, Brooklyn; New Jersey: Kearney, Plainfield; Michigan: Saginaw; Missouri: Springfield, Independence, St. Joseph; Pennsylvania: Philadelphia, Coraopolis; District of Columbia: Washington; Virginia: Phoebus, Roanoke; California: Los Angeles, Belvidere, San Francisco, Alameda, Stockton; Oregon: Portland; Washington: Seattle, Chehalis; Canada: Montreal, Fredericton, N. B., New Westminster, St. Johns, N. B., Victoria, British Columbia. I think of another, Hillsboro, Texas, that is completed. That is I think, all for the moment.

Q. 9. Please state what features have led to this extensive introduction and use of what you have termed the Hassam pavement, and please define what you mean by the Hassam pavement.

Objected to by Defendants' Counsel as immaterial.

A. It is the durability of the paving and the easy way of construction, and the low cost. I mean by the Hassam pavement, the placing of uncoated stone on prepared earth foundation, the rolling or compressing the same to reduce the voids to a minimum, then

the grouting of the voids with the cement grout until the voids are filled, then by placing a suitable wearing surface on the said foundation.

Q. 10. You referred in your last answer to the low cost of this pavement. Will you please state generally about what the price received for this pavement has been?

A. From a dollar and forty-five cents up to as high as four dollars and ten cents, due to the conditions, both of labor, teams, and prices of material and also to the surface that is placed upon the top of the pavement.

Q. 11. You also referred to the durabilitiy of this pavement in one of your previous answers. Will you please state somewhat more in extent what you mean by this?

A. It is proven that the paving is very durable and that it is wearing well and giving satisfaction in nearly all places that we have laid it.

Q. 12. Has this particular pavement been put in localities and cities where it had been almost impossible to devise or lay a pavement which would stand the traffic conditions, and if so please give some specific instances.

Objected to by Defendants' Counsel as being leading and also immaterial.

A. It has been laid in places where the traffic was very heavy and where we have taken up other pavements that have been laid not over five years, to replace it with the Hassam paving. This has been done in Missouri and also in the City of Worcester. In

Missouri the brick street was taken up and in Worcester the Warren Bitulithic was taken up over a mile and relaid with the Hassam pavement and grouted with the granite block.

Q. 13. How has the Hassam pavement stood with relation to automobile traffic?

Objected to by Defendants' Counsel as immaterial.

A. We have found that it is standing the automobile traffic better than any paving that has been put on for state roads, or any paving known of the price of the paving. For instance, we laid a state road six years ago on the main thoroughfare between Worcester and New York, and it is in excellent condition today. This has something over six hundred automobiles passing over it per day, at a high rate of speed, as has been shown by the State Engineer taking count of the number that were passing.

Defendants Counsel objects to last part of answer, which refers to the State Engineer, as hearsay.

A. I can deliver these statistics if wanted.

Q. 14. Has the Hassam pavement been used for any automobile race construction, and if so please state fully concerning the same.

Objected to by Defendants' Counsel as immaterial.

A. We have built the Long Island Motor Parkway for the William K. Vanderbilt associates, on Long Island.

Q. 15. Is this the so-called "Vanderbilt Race-Course"?

A. It is.

Q. 16. Why was the Hassam pavement adopted on this Vanderbilt race-course, so far as you know?

Objected to by Defendants' Counsel as irrelevant and immaterial.

A. Mr. E. G. Williams, the Chief Engineer for the Vanderbilts, and Mr. Pardington, the Manager, came to New England to investigate the work we had done and I was called to Mr. Vanderbilt's office after that and the work was given to us without competition.

Q. 17. How long a stretch of the Hassam pavement was put on this automobile race-course?

A. About twelve miles.

Q. 18. Referring now in the general terms of your first patent, No. 819,652, will you please state if this construction has been used in all of the so-called Hassam pavements to which you have referred?

A. I think it has, yes, sir.

Q. 19. Please now refer to the Hassam second patent, No. 851,625, and state generally what percentage of the so-called Hassam pavement has been laid in accordance with the improvement of this patent. I am not asking you to qualify generally as a patent expert, but to answer this question in your understanding of your improvement covered by this patent, and as a civil engineer.

A. I think all of our work comes under this patent.

Q. 20. Please now refer to the Hassam third patent, No. 861,650, and state generally what percentage of the so-called Hassam pavement has been laid in accordance with the improvement of this patent.

A. I think all of our pavement comes under these three patents.

Q. 21. Perhaps you did not clearly understand my last question. This last patent covers a particular top layer of small uncoated stones. I am referring particularly to a pavement having this top surface. With this explanation please answer the last question; that is, what percentage?

A. In my judgment, probably eighty per cent.

Q. 22. Referring now to the business done by the licensee corporation, the Oregon Hassam Paving Company, and to the contract under which this company works, which is dated July 16, 1909, will you please state generally about how extensively this licensee company has worked under this contract, that is, about how much pavement it has laid in its territory since this contract was made?

Objected to by Defendants' Counsel as irrelevant and immaterial.

A. Approximately 46½ miles.

Q. 23. Will you please produce one of the circulars issued by this licensee company?

A. I do.

Counsel for Complainants offers the circular produced by the witness and the same is marked "Complainants' Exhibit No. 6, Circular of the Oregon Hassam Paving Company, C. F. W., Notary Public."

Objected to by Defendants' Counsel as incompetent and immaterial.

Q. 24. Has it not been the custom of the Hassam Paving Company and its licensee companies to use a plate giving the date of the first patent in suit, and if so will you please produce one of these plates?

A. Yes, and I do.

Counsel for Complainants offers in evidence the plate produced by the witness and the same is marked "Complainants' Exhibit No. 7, License Plate, C. F. W., Notary Public."

Objected to by Defendants' Counsel as incompetent and irrelevant as to the Oregon Company for the reason that the witness has not shown any present knowledge as to whether such stamp is affixed by said company or not.

Q. 25. How are these license plates used to your knowledge?

A. They are sent to the licensed companies with orders to place them in conspicuous places in the streets.

Cross-examination by Mr. Hall, defendants' counsel:

x-Q. 26. Is the Oregon Hassam Company still a licensee of the parent company?

A. It is.

x-Q. 27. Is not that business being now conducted by the parent company?

A. It is not.

x-Q. 28. Who is the manager of the Oregon Company?

A. My last knowledge, John H. Crane.

x-Q. 29. The parent company owns fifty-one per cent. or more of the stock of the Oregon Company, does it not?

A. It doesn't own any.

x-Q. 30. Has it at any time?

A. I think it has, yes, sir.

x-Q. 31. How long since it closed out its interest in the stock of that corporation?

A. I cannot give you the dates of that without the records.

x-Q. 32. Give it approximately.

A. Some time in 1911.

x-Q. 33. You have stated, Mr. Hassam, that for a period of sixteen years you were constantly employed as an engineer in the construction of roads, streets and highways within the State of Massachusetts, what kind of a quality of roads and streets were you constructing?

A. Macadam, gravel, brick, asphalt, Warren bitulithic, granite block, wood block. I think that is all.

x-Q. 34. Were you ever in the employ of the Warren Construction Company?

A. No, sir.

x-Q. 35. You have laid their pavement?

A. As engineer and inspector of it.

x-Q. 36. But as such engineer you were and are familiar with every detail of the laying of Warren bitulithic pavement?

A. I am familiar with every detail of the laying of the Warren bitulithic paving, but not the mixing process of the top at their plant.

x-Q. 37. You are familiar with every step in the process of laying macadam pavement?

A. Yes, sir.

x-Q. 38. In the laying of brick pavement, what kind of foundation did you use, or cause to be used?

A. Ordinarily, concrete foundation, mixed method.

x-Q. 39. Did you use the same in preparing a foundation for wooden block?

A. Yes, sir.

x-Q. 40. And in the preparation of a foundation for granite blocks?

A. Yes, sir.

x-Q. 41. In preparing a foundation where a road or street is to be constructed you usually prepare your sub-grade, do you not?

A. We do, yes, sir.

x-Q. 42. A certain distance below the street grade?

A. Certainly.

x-Q. 43. The next process was to roll the sub-grade with a heavy roller?

A. Sometimes, not always.

x-Q. 44. Now, where the Warren Construction people laid pavement, they laid upon the sub-grade, prepared as I have indicated, broken rock or crushed rock, did they not?

A. They did, yes, sir.

x-Q. 45. They then rolled the rock with a heavy roller to reduce the voids, did they not?

A. They did.

x-Q. 46. They afterwards applied their mat or surface of asphalt, or whatever mixture they used, and rolled that, did they not?

A. They did.

x-Q. 47. They then applied a coat of fine chipped rock after the wearing surface had been applied and rolled that with a roller sufficiently heavy to force it into the surface of the street, did they not?

A. They did.

x-Q. 48. Are you familiar with the above method of construction of street and highway by what is known as the Barber Asphalt Company?

A. I am, yes, sir.

x-Q. 49. Their method of construction is very nearly identical with that of the Warren Construction Company is it not, except in the use of the wearing surface?

A. No sir, I think it varies considerably.

x-Q. 50. They prepare the sub-grade practically the same, do they not?

A. They do.

x-Q. 51. And apply the crushed rock and roll it in practically the same way, do they not?

A. They do not.

x-Q. What difference is it?

A. They generally lay a concrete base by a mixed method of concrete, sand and stone from four to six inches thick.

x-Q. 53. Will you briefly describe the process of laying a macadam pavement?

A. I shouldn't call a macadam a pavement. From my understanding, simply a road. Macadam pavement is laid by the following process: The sub-grade is prepared, crushed stone is generally spread four inches

thick, of a 2½ inch size. This is rolled, then another coat of a smaller size stone is placed upon this and rolled, stone dust or sand is spread upon this stone and wet and rolled so it won't rattle.

x-Q. 54. You mean until the voids are filled as near as can be?

A. As near as can be, yes.

x-Q. 55. The dust or fine material used as a top dressing, which you have referred to, is called a binder, is it not?

A. Yes, sir.

x-Q. 56. When did you first begin the construction of what is here referred to as "Hassam pavement"?

A. In 1905.

x-Q. 57. Where?

A. In the City of Worcester.

x-Q. 58. What quantity of pavement did you construct in 1905 in the City of Worcester?

A. One street.

x-Q. 59. Where, that is what block?

A. Salem Street.

x-Q. 60. Between what other streets?

A. Between Myrtle and Madison and Park streets, with a granite block surface on them.

x-Q. 61. Was that street constructed under contract with the City?

A. No, sir, it was not.

x-Q. 62. Was it paid for by the City?

A. No, sir; it was done when I was Street Commissioner, by permission of the Mayor of Worcester.

x-Q. 63. At the expense of the City?

A. Yes, sir.

x-Q. 64. What is the difference between what you refer to in your direct testimony as "Hassam pavement" and "Hassam foundation"?

A. The Hassam pavement is laid with a 1 or 1 to 2 mixture of grout and a screening of pea stones spread upon it and rolled into the pavement, making it one solid homogeneous mass. In the foundation, the grout is 1 to 3 or 1 to 4 mixture, and after the concrete is set a sand cushion is placed over the concrete, the granite block, wood block, brick, or any material of that kind is laid upon this and then grouted with cement.

x-Q. 65. In your answer where you refer to "1 to 2," "1 to 3," or "1 to 4," you mean one part of cement to two, three and four parts of sand, do you not?

A. I do.

x-Q. 66. This mixture of cement is not new, is it?

A. As a grout?

x-Q. 67. No, the proportions.

A. No, sir.

x-Q. 68. You spoke in your direct testimony of the durability of Hassam pavement. There is none that has been laid longer than six years, is there?

A. No, sir.

x-Q. 69. Has not some of your licensee companies had a great deal of litigation and a great deal of protest from property holders over the quality of the Hassam pavement as a pavement?

A. I know of no litigation, but I think they have

had some dissatisfaction from property owners, but not any more so than they do, or as much as they do, over other classes of pavements.

x-Q. 70. Are you familiar with the decision recently handed down by the Oregon Supreme Court in the case wherein the Hassam pavement was in litigation with the State of Oregon, and rendering a decision against the pavement although on demurrer?

A. No sir, I am not.

x-Q. 71. About what rate per yard do you charge your licensees for the use of this pavement?

A. We have different ways of letting it. Where the licensee uses the patent, 15c per yard. Sometimes when we furnish steam rollers and mixers we charge more then.

x-Q. 72. Do you ever charge any less than 15c?

A. I do not think of any case where we have charged less on any pavement or any foundation.

x-Q. 73. Did you charge the City of Lowell less?

A. They laid the foundation. We always charge the same to everyone on a foundation, 10c. a square yard.

x-Q. 74. Will you examine this paper and state whether that is a form of contract prepared and used by your company?

A. This is our form for foundation, and foundation only.

Counsel offers this paper in evidence and the same is marked "Defendants' Exhibit No 1."

x-Q. 75. As I understand you, the usual price to licensees for pavement is 15c. per yard.

A. For a license to lay it, yes.

x-Q. 76. That doesn't include the furnishing of anything?

A. No, none whatever.

x-Q. 77. You stated that since the organization of your corporation you had laid approximately three million yards of pavement. Does that include foundation as well?

A. Yes, sir.

x-Q. 78. About what proportion would you say was pavement and what is foundation of that?

A. Eighty to ninety per cent. would be pavement.

x-Q. 79. I would ask you if it is not a fact that the Hassam pavement is more inclined to be dusty and dirty than either the Warren bitulithic pavement or the Barber asphalt?

A. In my opinion when it is first laid it is. After the cement dust which wears off the top has had traffic for approximately a year, or enough to wear that off, it is not as dusty as either one of them.

x-Q. 80. I would ask you whether or not it isn't more apt to wear out automobile tires than almost any other kind of pavement?

A. No sir, I think not.

x-Q. 81. What is the distinction or difference between what has been here designated as patents Nos. 1 and 2. What is contained in the second patent that is not in the first?

A. The second patent gives a right to lay the pavement in one or more courses, that is the substantial difference.

x-Q. 82. Could you not have laid it in one or more courses under the first patent?

A. Possibly.

x-Q. 83. And what improvement, if any, is added by what is here designated as the third patent, over the second?

A. By the combination of the grouting and agitating by rolling during the construction of the grouting, and by putting on one or more layers of pea stone on the top until it is a perfect grade as desired.

x-Q. 84. You provided for rolling in your first patent, did you not?

A. Yes, sir.

x-Q. 85. Then all the difference between the second and third patents would be the addition of the pea stone, would it not?

A. No, I do not think so. I think there is a difference there. I haven't looked at these patents for so long I do not recollect the differences that are in them. I should have to study them for a few minutes in order to answer that question. Patent No. 1 does not allow for grouting and agitating the mass to expel the air and fill the voids of the stone with said grout and repeating the process of laying the mixture of stone and grout and agitating the same until the desired thickness is reached.

x-Q. 86. That you claim, however, was remedied by patent No. 2?

A. Yes, sir.

x-Q. 87. Now the question is, what improvement did you make, if any, by patent No. 3?

A. As I remember this, our patents Nos. 1 and 2 are the process of constructing a road or pavement

which consists in laying a layer of uncoated stones. In patent No. 3 it comprises a foundation or layer of hard rolled stone; I do not know but what it might be coated.

x-Q. 88. Is it?

A. Not necessarily.

x-Q. 89. You have a fourth patent, have you not?

A. I think I have several of them; I think I have seven or eight of them.

x-Q. 90. And that provides, does it not, for a layer of grouted stone?

Objected to by Complainants' Counsel as immaterial, as that is not in suit.

A. I have not looked at them for so long I would have to study them.

x-Q. 91. Now the Warren Company also use the pea stone, do they not, and have for many years, as top surface?

A. Yes, sir.

x-Q. 92. They are not licensees of yours for that purpose?

A. They are not.

The desposition of the witness having been read to him, the signature is waived by counsel.

HAROLD PARKER, being called as a witness on behalf of the Complainants, and being first duly sworn, deposes and testifies as follows:

DIRECT-EXAMINATION BY MR. SOUTHGATE:

Q. 1. What is your name, age, residence and occupation?

A. Harold Parker, residence Lancaster, age fifty-seven, civil engineer.

Q. 2. What experience have you had in connection with road construction?

A. I have had about twenty-eight years' experience in building roads. As civil engineer I built a good many roads in my early experience, and for twelve years was a member of the Massachusetts Highway Commission in building all of the state highways in the State of Massachusetts, and very many of the towns and city roads and streets in the State. My observation of roads and construction has taken me into nearly every part of the United States and many foreign countries.

Q. 3. Are you familiar with the so-called Hassam road or Hassam pavement?

A. Yes.

Q. 4. Will you please state what you have observed concerning the advantages of construction and the durability of such roads as you have seen and observed, constructed under the so-called Hassam process, and please answer the question generally and comparing the same with other methods of construction of roads with which you are familiar.

Objected to by Defendants' Counsel as incompetent and immaterial.

A. My observations of the so-called Hassam method of making a permanent road are based upon the following facts and technical considerations:

Firstly, I consider that the modern method of building a road to resist both the ordinary horse-drawn

traffic and the action of automobiles requires a road or pavement to be so constructed that it will successfully resist both the conditions. A concrete properly constructed is in my opinion the only really permanent pavement to be used in roads where traffic is heavy, and in order to make it effective it must be built in a method different from that employed in ordinary concrete construction. The reason that I hold this view is that from the nature of things a concrete mixed either by hand or by machine, in the very act of handling, must, owing to the different specific gravity of its ingredients, be more or less separated into its component parts and that, therefore, ordinary concrete hauled out and dumped onto the road is actually separated by the act itself and therefore cannot be uniform in its structure.

Further, the stone composition or concrete placed on the road and tamped with an ordinary hand-tamper is not, and never can be, uniformly solid in its structure, and many weak places necessarily develop because of the different commingling of the ingredients. This results in an uneven surface and the destruction of the road more or less rapid, according to the skill of the persons laying the concrete.

Furthermore, it is impossible to lay concrete in the ordinary way, in thin layers on a road, and get the surface smooth and satisfactory.

On the other hand, the method employed under the Hassam process overcomes all of these difficulties in the following manner:

The broken stone is first placed upon the roadbed, properly prepared and of actually measured cross-section, and rolled on with a heavy roller so that the stone composing the road is as nearly thoroughly locked together as it is possible to get them without a binder, and its air spaces between the stones are reduced to a minimum. Stones so laid can be brought to a perfect cross-section. When this is done, a mixture of cement and sand and water or grout is distributed evenly over the entire mass until it flushes to the surface, and while it is yet green is rolled once more, thus eliminating any air spaces in the structure, and the result is a practical monolith of uniform density and structure and of perfect cross-section.

In order to secure the most effective results, a sealing or final coat of rich grout is distributed evenly over the surface as a wearing surface, and on this is spread a thin layer of stone chips sufficient in quantity to absorb the grout. This produces a wearing surface which is neither too smooth and which protects the road itself.

My experience resulting from long observation and trial is that a pavement made properly in this way is the only form of concrete structure which will stand the wear and tear of traffic.

CROSS-EXAMINATION BY MR. HALL, DEFENDANTS' COUNSEL:

x-Q. 5. What relation, if any, have you to the Complainant, Hassam Paving Company?

A. I am one of its Directors and also its executive officer; that is, first vice-president with the general charge of the work outside of the construction.

x-Q. 6. You are a stockholder in the corporation?

A. I don't think at the present moment I own a share of stock.

x-Q. 7. Are you a stockholder in the Oregon Hassam Company?

A. No, sir.

x-Q. 8. But you are in the employ of the corporation?

A. Yes, sir.

x-Q. And have been for how long?

A. I think I became an officer of this company the first of October last year.

x-Q. 10. What class of roads have you been constructing in the past twenty-eight years, Mr. Parker?

A. I have built dirt roads, gravel roads, macadam roads, concrete roads, bitumen roads of every known character, and paving, brick and stone.

x-Q. 11. What was your process of building concrete roads, just briefly?

A. I did not build very many concrete roads until I came into this company, but what I have done were in the old-fashioned line.

x-Q. 12. That is, you mean by mixing the concrete on the ground and tamping it or rolling it?

A. I mean the ordinary method of laying concrete, which is to mix by hand or machinery and tamp it also by hand.

x-Q. 13. Would it not be practical to mix on the

ground by having a sufficient force of men for that purpose, and to follow up immediately with a heavy roller and roll the concrete instead of tamping it by hand?

A. My judgment is, and that is based upon observation, that hand-mixed concrete placed upon the road and rolled with a roller is absolutely unsatisfactory.

x-Q. 14. Would it be any better if it were machine mixed and then rolled with a heavy roller?

A. No, sir.

x-Q. 15. The grout used by the Hassam people in the construction of their pavement is not always mixed on the ground, is it, or by that I mean at the spot where the street is being constructed?

A. So far as I know, it is. Theoretically, it should be.

x-Q. 16. Are you familiar with the construction of what is known as the Warren bitulithic pavement?

A. Yes.

x-Q. 17. How long have you been familiar with that mode of constructing pavement?

A. I think I saw the first Warren bitulithic pavement laid.

x-Q. 18. When and where was that?

A. It was in the City of Boston. I should be at a loss to tell you how long ago, but it was when they first got their patents out.

x-Q. 19. Prior to 1900?

A. It was somewhere about 1900. It may have been a year before or the year after, but within a short time of that date.

x-Q. 20. In laying Warren pavement the street is sub-graded and usually rolled, is it not?

A. You get a firm sub-grade.

x-Q. 21. Then uncoated crushed rock of about two inches in diameter is laid down to about five or six inches in thickness, is it not?

A. I have never seen that method carried out by the Warren Brothers.

x-Q. 22. You have never seen them lay crushed rock as a base?

A. And then put the tar on it?

x-Q. 23. After rolling it.

A. I have never seen it done by the Warren Brothers.

x-Q. 24. Have you seen roads, prior to say 1905, the base of which was constructed in the manner in which I have described?

A. Yes, sir.

x-Q. 25. You say you have constructed them yourself?

A. Yes, lots of them.

x-Q. 26. And after the rock was applied it was then rolled in order to reduce the voids to a minimum, was it not?

A. Yes.

x-Q. 27. Now, after the road had been constructed practically as far as I have described the process, have you ever known or seen the application of a binder of tar or other bituminous material applied?

A. On the surface of a road so built? Yes.

x-Q. 28. And after such binder was applied, have

you seen it rolled in order to bind it or to drive the binder into the remaining voids of the rock?

A. Yes, by the additional application of some other substance to prevent the tar or other bituminous binder from adhering to the roller. But you have got, in my experience, to put something with your tar or oil, which ever you are using, which will fill up and prevent its being too plastic.

x-Q. 29. In constructing a macadam road, if it is constructed of crushed rock, you roll that, do you not?

A. Yes, sir.

x-Q. 30. And also apply some kind of a binder?

A. Yes, sir.

x-Q. 31. What kind of a binder do you usually apply?

A. In the properly so-called macadam, generally stone dust of the same material as the stone is used in the binder with the addition of water. Sand may be used.

x-Q. 32. Or clay may be used?

A. It may be, but it will spoil your road.

x-Q. 33. After you apply the binder on macadam roads it then should be thoroughly rolled, should it not?

A. Yes.

x-Q. 34. To force the binder into the voids?

A. The binder is carried into the interstices between the stones by the action of water as well as the process of rolling.

x-Q. 35. The mixing of sand and cement in parts of 1 to 1, 1 to 2, 1 to 3, and 1 to 4 are not new, are they?

A. No, sir, that is, sand and cement?

x-Q. 36. Sand and cement.

A. No.

Redirect-examination by Mr. Southgate:

Rd.-Q. 37. You were chairman of the Massachusetts Highway Commission several years before you resigned that position?

A. Yes, sir.

Rd.-Q. 38. Did the superiority of the Hassam pavement to which you have testified, have anything to do with your resigning this position and entering the employ of the Complainants, and if so please state.

Objected to by Defendants' Counsel as irrelevant and immaterial.

A. I should say yes, that I should not have joined the Hassam Paving Company as its officer unless I had been satisfied with the superiority of the product.

Signature of witness waived by counsel.

Adjourned until to-morrow, same place, at 10:30 A. M.

WORCESTER, Mass., June 7, 1912.

Met pursuant to adjournment.

Present: Counsel as before.

ARTHUR S. BROWNE, being called as a witness on behalf of Complainants, and being first duly sworn, deposes and testifies as follows:

DIRECT-EXAMINATION BY MR. SOUTHGATE, COMPLAINANTS' COUNSEL:

Q. 1. What is your name, age, residence and occupation?

A. Arthur S. Browne, fifty-one, Washington, D. C. Patent solicitor and expert.

Q. 2. Please state your qualifications and experience as patent expert.

A. I was graduated from Dartmouth College in 1881 and the following year I entered my present profession in which I have since been actively and continuously engaged. I have prepared and prosecuted many hundreds of applications for patents and I have made numerous investigations for the purpose of giving opinions concerning the novelty of inventions and the scope, validity and infringements of patents. I have testified as an expert witness in about three hundred and fifty patent suits in the United States Courts.

I have frequently visited work-shops and factories for practical experience.

I have heretofore testified in patent suits relating to street pavements.

I am retained by the Barber Asphalt Paving Company in patent litigation, and also by the Hassam Paving Company.

Q. 3. Have you examined, and do you understand, the inventions or improvements shown, described and claimed in the three Hassam patents in suit?

A. Yes.

Q. 4. Please state what you understand to be the inventions or improvements of these three patents; particularly claim one of the first Hassam patent, No. 819,652; claim two of the second Hassam patent, No. 851,625; and all four claims of the third Hassam patent, No. 861,650.

A. The first Hassam patent, No. 819,652, is for certain new and useful "Improvements in Pavements and Processes of Laying the Same", and at the outset the invention says:

> "My invention relates to the making of stone or gravel roads or pavements, and it consists of an improvement in the method of making such roads or pavements, as hereinafter described, and particularly pointed out in the claims.
>
> The object of my invention is to construct a cheaper, more durable, and for many purposes a more efficient road than has hitherto been constructed of broken stone or mixed stone and bituminous or other cement." (Page 1, lines 13-23.)

The specification then goes on to refer to certain prior pavements and disadvantages thereof and then describes the pavement foundation as follows:

> "No bituminous material is used in my method of construction of road, but only broken

stone or gravel, sand, and cement. The street is first dug out to the proper depth for the subgrade, which is rolled, if needed. Broken stone or gravel is then spread to a proper depth and rolled with a steam-roller or compressed by any suitable means until the voids between the stone are small and the surface even. It will be noted that as there is no coating of cement, bituminous, or other material on the pieces of stone they can be compressed very close together and solid, and the voids left between them will be extremely small. When the stone or gravel has been compressed to the desired closeness and firmness, it is grouted with a mixture of cement, sand, and water, which may not be prepared until immediately before it is to be used and which does not require excessive handling, like the mixture for concrete, and therefore does not suffer from being handled by careless workmen. All the voids are filled with cement in the grouting operating." (Page 1, lines 56-80.)

In accordance with this described mode of operation, it will be noted, (1) that uncoated broken stone or gravel is employed for the foundation; (2) that this uncoated broken stone is spread to the proper depth and is then rolled with a steam roller, or otherwise compressed until the voids or vacancies between the stones are made very small; and (3) after the stone has thus been compressed, it is grouted with a mixture of cement, sand and water which flows into the small voids or vacancies between the broken stone so that they are filled with the cement.

The specification then goes on to describe the appli-

cation of a suitable surface to the foundation. It states that after the cement has stood and grown hard and a solid foundation has been obtained, brick, stone or wood block may be added for the surface. It states, however, that it is preferred to make the surface by means of a thicker grout of cement, sand and water and fine broken stone or gravel, the stone or gravel being rolled into the grout when it is still green.

The road or pavement which is thus prepared is defined in claim one of this first Hassam patent as follows:

> "1. A road or pavement consisting of a bottom layer of hard-rolled uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, and a suitable surface placed on said grout."

It will be noted that this claim specifies the particular characteristic of the foundation, including the hard rolled uncoated stone, and the grouting filling the voids; and that it broadly recites the wearing surface, defining it simply as "a suitable surface placed on said grout."

In other words, the "suitable surface" of the claim may be any of the surfaces such as are specifically referred to in the specification, namely of brick, stone or wood block, or of the fine stone or gravel mixed with a grout of cement, sand and water. The claim is directed to the specific foundation combined with a suitable wearing surface.

The second Hassam patent, No. 851,625, is directed to a particular improvement upon the road of the first

Hassam patent, No. 819,652. At the outset the specification of the second Hassam patent says:

> "My invention relates to a process of constructing stone or gravel roads or pavements and it is designed particularly as an improvement on my previous invention, patented May 1, 1906, No. 819,652." (Page 1, lines 12-16.)

The specification then goes on to say that difficulty had been encountered in distributing the grout in such manner that it will run into and fill all the voids or spaces in the stone layer. Accordingly, the particular object of the invention of the second Hassam patent is, in its own language, "to lay the pavement, and particularly the grout, in such a manner that all the voids in the stone layer will be filled therewith and no holes will be left in the surface." (Page 1, lines 36-40.)

This is accomplished by agitating the grout as it is placed upon the stone and after being placed upon the stone so that the air holes are closed up, and the voids are filled with the grout. As stated in the specification, for the purpose of properly agitating the grout a steam roller is preferably employed, which may be the same as used for compressing the stone.

This agitating the mass of stone to expel the air and fill the voids with the grout is the distinguishing improvement as compared with the first Hassam patent and this is made evident by the language of claim two of the second Hassam patent, which reads:

> "2. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer

> until the voids are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between the stone with said grout, and placing a surface on the mass thus formed."

In other words, the layer of broken uncoated stone is prepared as in the first Hassam patent and is grouted with a mixture of cement, sand and water, as in the first Hassam patent, and a wearing surface is applied as in the first Hassam patent; but the distinguishing characteristic is that the mass is agitated as by rolling during the application of the grout so as to insure expelling the air and filling all the voids between the stone with grout.

The third Hassam patent, No. 861,651, was copending in the Patent Office with the second Hassam patent, and its distinguishing feature consists in the way in which the wearing surface layer is applied to unite with the grout foundation. After referring to the first Hassam patent by number and date, I note the specification of the third Hassam patent reads:

> "The principal object of this invention is to provide for improving the surface layer, and the improved surface layer can be used either with those constructions and methods which involve the use of previously coated stone, or with that which is carried out with uncoated stone afterwards grouted." (Page 1, lines 20-25.)

The specification then describes the laying of the broken stone foundation and the application of the

grout thereto in substantially the same way as in the second Hassam patent, so that the voids are all filled with the grout; but with this difference, that the grouting is one which fills the voids and overflows the foundation.

In accordance with the first Hassam patent the cement used in the grouting operation is allowed to stand until perfectly hard before the wearing surface is applied. In accordance with the third Hassam patent the wearing surface is applied while the grout is still fluid and before the cement has a chance to set or harden, so that the wearing surface material is united to the foundation by the grout. In this connection the specification of the third Hassam patent says:

> "In order to produce a suitable surface on top of the pavement or other structure which is being made, uncoated fine or pea stones are rolled into the layer *c* before the cement has a chance to set or harden. The top layer *c*, however, may be formed of a mixture of sand, cement and fine pea stones, preferably in substantially equal proportions, and a suitable amount of water, and applied to the top of the layer of hard rolled stones." (Lines 53-61.)

There are four claims in the third Hassam patent.

In accordance with claim 1, the hard rolled stone of the foundation need not be uncoated in accordance with the statement made in lines 42-45 of the specification, and the surface layer of fine stones is embedded in the continuation of the grouting which fills the voids between the foundation stones.

Claim 2 requires that the foundation layer shall be composed of uncoated stone, and it specifically requires that the top layer of smaller uncoated stones shall be compressed into the surface of the foundation grouting before it sets.

In accordance with claim 3 the foundation stones need not be uncoated, and the top layer is compressed into the surface of the foundation grouting before it sets.

Claims 1, 2 and 3 are directed to the structure or pavement itself. Claim 4 is directed to the method of making the pavement; and in accordance with this method the uncoated foundation stone is first rolled, then a thin grouting is placed thereon which runs down and fills the voids in the foundation stones, and finally fine uncoated stones are compressed into the grouting before it sets.

Q. 4. Have you read, and do you understand, the process of making a roadway and the roadway itself described commencing line 19, page 24, to and including line 19, page 26 of Defendants' answer in this case?

A. Yes.

Q. 5. Please compare the process of making a roadway and the roadway itself described in the said part of Defendants' answer, to which your attention was called in the previous question, with the three Hassam patents in suit and state whether or not you find that the same are substantial embodiments of any of the claims of said patents and if so, please particularize the claims and give reasons in full for your answer.

A. The portions of the answer to which my atten-

tion has been directed describe a pavement having the characteristics defined in claim 1 of the first Hassam patent and of claims 1, 2 and 3 of the third Hassam patent; and the process or method of making found in the answer is in accord with claim 2 of the second Hassam patent and claim 4 of the third Hassam patent.

For brevity, I will refer to the pavement and method as described in the portions of Defendants' answer to which my attention has been directed as "Defendants' Pavement" and "Defendants' Method".

The rock used for the foundation in Defendants' pavement is thus described in the answer—

> "The rock for making the concrete shall be the best hard, dark-colored, sound basalt rock, or granite, or equally hard stone, not less than ninety per cent. broken in pieces not larger than two and one-half (2½) inches in the largest diameter, nor smaller than one and one-half (1½) inches in diameter.
>
> "The broken rock shall be screened so that all dust, clay, loam, vegetable matter and pieces smaller than one-half (½) inch in diameter shall be removed. The rock shall be thoroughly washed if considered necessary by the City Engineer."

Accordingly, defendants employ a hard uncoated stone for the foundation.

Defendants then spread and roll the foundation stone in the following described manner:

> "Upon the finished subgrade, clean, broken rock, ninety per cent. of amount varying in size from two and one-half (2½) inches to one and

one-half (1½) inches, shall be spread to a sufficient depth to bring the surface after rolling to the proper finished grade of the street, which shall be six (6) inches above subgrade.

"This rock shall be thoroughly compacted by rolling with a road roller, giving a compression of not less than 250 pounds per inch width of roller, and shall be firmly bedded and the voids reduced to a minimum, and surface shall conform to grade and contour of the street. Such portions of pavement as it may not be possible to roll shall be thoroughly compressed by tamping."

Accordingly, as called for by the Hassam patents, the foundation layer of stones is rolled until the spaces or voids are reduced to a minimum and hence made small.

The defendants then place grout and agitate the mass by rolling or compressing, until all of the voids in the rock are thoroughly filled with the grout. In this connection the answer says:

"The voids in the rock shall then be thoroughly filled with a grout consisting of one part of Portland cement or two parts of sand. This grout shall be sufficiently thin to flow freely, and shall be thoroughly and continuously mixed and poured upon the rock until all the voids are filled and the grout flushes to the surface under the rolling or compression, which shall immediately follow the grouting and shall be continued until no further compacting results."

The answer does not specifically state water is employed, but in view of the statement that the grout is

sufficiently thin to flow freely, the presence of water is necessarily inferred.

Accordingly, as is the case in the first Hassam patent, the voids in the stone are occupied by the grout; and in accordance with the second and third Hassam patents the mass is agitated by rolling as the grout is applied, thereby insuring the elimination of air from the voids, and the filling of the voids with the grout. Also, as called for by the third Hassam patent, enough of the grout is employed to flush to the surface and hence to supply a layer of grout above the foundation stone.

A wearing surface is then applied as thus described in the answer——

> "Upon the surface of the pavement thus prepared, shall be placed a very thin layer of peastone, which shall be thoroughly spread and rolled or compressed evenly and smoothly over the entire surface. The peastone layer shall have just sufficient thickness to insure the complete filling of the voids in the pavement surface. Rolling shall continue until the grout flushes to the surface.
>
> "After rolling, this surface shall, at the discretion of the City Engineer, be broomed until surplus water is removed and the surface presents a true and even appearance."

Accordingly, a wearing or surface layer is applied as called for by the first and second Hassam patents; and this wearing surface layer consists of fine stones compressed into the surface of the grouting before it sets as in the third Hassam patent.

Defendants' pavement is, accordingly, that defined

in claim 1 of the first Hassam patent, and in claims 1, 2 and 3 of the third Hassam patent.

In accordance with claim 1 of the first Hassam patent, Defendants' pavement consists "of a hard-rolled, uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, and a suitable surface placed on said grout."

Likewise, in accordance with claim 1 of the third Hassam patent, Defendants' pavement is, "An artificial structure comprising a foundation layer of hard rolled stone having grouting filling the voids therein and a surface layer comprising a continuation of said grouting containing fine stones compressed into its surface."

Also, in accordance with claim 2 of the third Hassam patent, Defendants' pavement consists—"of a bottom layer of hard rolled uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, and a top layer of smaller uncoated stones compressed into the surface of said grouting before it sets."

Also, as called for by claim 3 of the third Hassam patent, Defendants' pavement consists of a "bottom layer of stone, a grouting placed upon said stone and filling all the voids therein, and a top layer of smaller uncoated stone compressed into the surface of said grouting before it sets."

Defendants' pavement is laid in accordance with the method or process defined in claim 2 of the second Hassam patent and in claim 4 of the third Hassam patent.

In accordance with claim 2 of the second Hassam

patent, Defendants' process of constructing a road or pavements "consists in laying a layer of uncoated stone, compressing said stone layer until the voids are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between the stone with said grout, and placing a surface on the mass thus formed."

It will be noted that Defendants agitate the mass to expel the air and fill the voids with the grout by rolling just as the second Hassam patent states is preferable.

Likewise, Defendants' method is as defined in claim 4 of the third Hassam patent, namely, it is,— "The method of making a pavement which consists in rolling uncoated stone, placing a thin grouting thereupon, allowing the grouting to run down and fill the voids in the layer of stones, and compressing fine uncoated stones into said grouting before it sets."

Noon Recess.

Cross-examination by Mr. Hall, defendants' counsel:

x-Q. 6. Are you a practicing attorney, Mr. Browne?

A. I am a member of the bar but I do not practice.

x-Q. 7. Do you not practice in the Patent Department in Washington?

A. As a solicitor, yes.

x-Q. 8. You state that you are retained by the Hassam Company?

A. Yes.

x-Q. 9. In what capacity?

A. As a patent expert to testify in patent suits.

x-Q. 10. In any and all suits that they may have?

A. Yes.

x-Q. 11. As I understood your testimony upon direct examination, that the difference or distinction between patents numbered one and two is that in number two there is some difference in the method of agitating the rock and the grout. Is that correct?

A. Yes.

x-Q. 12. Patent No. 1 in paragraph three thereof, provides that after the layer of uncoated stone is laid and compressed, it is grouted with a mixture of cement, sand and water and then rolled; that is, it doesn't provide for rolling but by compressing it into the surface of said grout before it is set. Do you understand from the word "agitating," used in paragraph three of patent No. 2, that any other means of agitation is employed than rolling?

A. I do not understand that in accordance with the first patent there is any rolling or compression of the grout in forming the foundation. As I understand the first patent the grout is simply poured upon the foundation and flows into the voids between the stones by gravity. The first patent does provide that after the cement thus handled has been allowed to stand until perfectly hard, that the surface layer of fine, broken stone and a thicker grout is rolled and compressed.

In the second patent it is stated that a steam roller is preferably employed for compressing the stone. I infer that this may be done otherwise than by rolling.

x-Q. 13. Under the formula of patent No. 1 the

grout was to be compressed after being spread on the uncoated stone, was it not?

A. No, not the grout which enters into the voids between the uncoated stones. The grout used with the surface layer was to be compressed.

x-Q. 14. Would you say as an expert, from your examination of patents here designated as Nos. 1 and 2, that supposing that No. 1 had not been patented that a person could use the formula laid down in No. 2 without infringing upon No. 1?

A. No.

x-Q. 15. Then what value or new idea was added by No. 2?

A. The idea of rolling or otherwise agitating the mass at the time the grout was applied to the foundation layer of stone. As the second patent states, in the practice of the first patent, the grout does not expel all the air in the cavities or voids between the stones, and hence a solid foundation is not obtained.

In accordance with the second patent, owing to the rolling of the foundation at the time of the application of the grout, all of the air is expelled and the voids between the stones are filled with the grout. This makes a solid foundation.

x-Q. 16. As I understand from your direct testimony, the only changes in patents Nos. 1 and 2 worked by patent No. 3, is the manner in which the wearing surface is applied, that is being applied while the foundation is still green?

A. Yes, excepting that in accordance with some of the claims of patent No. 3, the foundation stone need not be uncoated.

x-Q. 17. There are no other differences?

A. No.

x-Q. 18. But if any person, after the issuance of patents Nos. 1 and 2, attempted to lay a pavement under No. 3, he would have been infringing upon Nos. 1 and 2, would he not?

A. Yes.

x-Q. 19. So, therefore, the additions or so-called improvements incorporated in No. 3 were not necessary to the patent, were they?

A. They were not necessary to patents Nos. 1 and 2. That is to say, patents Nos. 1 and 2 might be infringed without infringement of patent No. 3.

On the other hand, patent No. 3 involves an additional improvement of its own which could have been employed.

Therefore, a concern might be licensed under patents Nos. 1 and 2 and not under No. 3; and should such licensee then practice the process and make the pavement of patent No. 3 it would be an infringer of No. 3.

x-Q. 20. But in patent No. 1 or No. 2 there are no directions or formulæ that would preclude the rolling of the grout after being applied, if the builder thought proper to do so?

A. No.

Deposition closed.

Signature of witness waived.

It is stipulated between counsel that the exhibits offered in evidence may be kept in custody of counsel

and not returned by the Notary, subject to inspection at all reasonable times by opposing counsel.

Complainant rests its *prima facie* case.

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF OREGON.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation,

Complainants,

vs.

CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation,

Defendants.

NOTARY'S CERTIFICATE.

I, C. Forrest Wesson, a Notary Public in and for the Commonwealth of Massachusetts, do hereby certify that the foregoing depositions of WALTER E. HASSAM, HAROLD PARKER and ARTHUR S. BROWNE, all residing more than one hundred miles from the place of trial, were taken before me as Notary Public at the time and place stated in the record; that counsel

for both parties were present during the entire taking of the depositions; that the witnesses were first duly sworn by me to tell the whole truth, before testifying, with the exception of Harold Parker, who by agreement was sworn by Complainants' counsel; that the testimony was taken stenographically in writing by consent of counsel and read to the witnesses; that the signatures of the witnesses to their depositions were waived by counsel; that by agreement of counsel the exhibits offered in evidence were left in the custody of counsel for Complainants; and that I am not connected by blood or marriage to any party to this suit, nor interested directly or indirectly in the event thereof, nor am I attorney or of counsel for either party.

C. Forrest Wesson,
Notary Public.

[SEAL]

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF OREGON.

In Equity.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation, Complainants, vs. CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation, Defendants.	Depositions Taken at Portland, Oregon.

PORTLAND, Oregon, November 12, 1912.

Parties met pursuant to adjournment and to the annexed stipulation for the taking of testimony at the office of John H. Hall and Jesse Stearns, Railway Exchange Building, Portland, Oregon, at 10 o'clock A. M. Present, Charles H. Carey, Esq., for complainants, and John H. Hall, Esq., and Jesse Stearns, Esq., counsel for defendants.

Thereupon the following proceedings were had, to wit:

GEORGE M. HYLAND, called as a witness on behalf of the defendants and after being duly sworn, testified and was examined as follows:

DIRECT-EXAMINATION BY MR. STEARNS:

Q. State your name, age, residence and occupation.

A. George M. Hyland, age forty-four years, residence 625 Halsey street, Portland, Oregon, occupation farmer.

Q. What was your occupation in 1909 and 1910?

A. I had charge of the promotion of the Oregon Hassam Paving Company, promotion department.

Q. By that, do you mean securing the work?

A. Yes, securing contracts.

Q. How long have you been connected with the Hassam Company in that capacity?

A. Two years.

Q. State whether or not you had anything to do with the incorporation of the specifications for Hassam pavement in the ordinances adopted by the council of the City of Portland on the 27th day of April, 1910, being Ordinance No. 21172, entitled "An ordinance in relation to the improvement of streets, and declaring an emergency".

A. Was that the general ordinance covering paving of streets?

Q. Yes.

A. I asked the engineer to incorporate our specifications with the rest, with the other paving companies and specify the name "Hassam."

Q. Did you furnish a copy of your specifications as incorporated in said ordinance to the City Engineer?

A. Yes, I furnished him a copy of the specifications at two different times.

Q. What did you say to the engineer at that time as near as you can recollect?

Objected to by counsel for complainants as calling for conversations between persons not parties to the suit.

A. I requested him to include the Hassam specification on the promise that we would furnish the city the same protection as other paving companies; that our people were established in this community now and that we were entitled to the same considerations others received. That is the substance of the conversations I had, as nearly as I can remember at this time.

Q. Previous to the adoption of this ordinance had the Hassam pavement been recommended as standard pavement in the city of Portland?

A. Not by the council or the city authorities. They had declined to pass an ordinance authorizing it and we had been obliged to depend on each individual ordinance for the work.

Q. Had Hassam pavement been laid on the streets of Portland prior to that time?

A. Yes, a small amount of it had been, in certain streets.

Q. What did you do to get the pavement adopted in certain streets prior to the adoption of this ordinance?

A. It was necessary to circulate a petition and get signers, often bringing a number of property owners before the council to urge the passage of the ordinance authorizing it.

Q. That took place in each instance?

A. In each instance. We always brought the property owners there and the question was always raised that there was no ordinance authorizing the Hassam pavement.

Q. Who was the city engineer at the time this ordinance was prepared?

A. J. W. Morris.

Q. How long since the first Hassam pavement was laid in the City of Portland, if you know?

A. About five years this winter.

Q. Where was that?

A. There were two sections put down about the same time, and I cannot tell you which took precedence. There were three blocks on Hancock street between East 21st and 24th streets, and there were seven blocks laid in Holladay's addition between 15th and 18th and Clackamas and Multnomah, or 16th and 17th and Clackamas and Multnomah; there were seven blocks there.

Q. Do you recall when the Hassam pavement was laid on Grand avenue between Belmont and Hawthorne?

A. That was put there in the summer of 1909, or 1908. I am not sure. I think it was 1909.

Q. Do you remember who laid this first pavement in Holladay's addition?

A. Miller and Bauer.

Q. Who laid the pavement on Grand avenue?

A. The same company, the Oregon Hassam Company, which was the company that had been organized at that time.

Q. The pavement on Grand avenue was laid by the company known as the Oregon Hassam Paving Company?

A. Yes.

Q. Have you been over that pavement frequently on Grand avenue?

A. Yes.

Q. Recently?

A. Yes, but not to notice it particularly.

Q. Can you state whether or not there have been any repairs made in that pavement on Grand avenue between Belmont and Hawthorne avenue?

A. Yes, quite extensive repairs have been made. I am not familiar with the details of the repair work, but we have discussed it and talked about and been over it.

GEORGE M. HYLAND.

(There was no cross-examination of this witness.)

GEORGE W. GORDON, called as a witness on behalf of defendants, and after being duly sworn, testified as follows:

DIRECT-EXAMINATION BY MR. JESSE STEARNS:

Q. State your name, age, residence and occupation?

A. George W. Gordon, age, sixty-three on the 7th of this month, residence 716 Corbett street, Portland, Oregon.

Q. How long have you resided in Portland, Oregon?

A. About twenty-two years.

Q. Where were you born?

A. Liverpool, England.

Q. At what age did you leave Liverpool?

A. I was about 24 to 25.

Q. What was your occupation in Liverpool?

A. I was apprenticed as a carpenter and builder.

Q. Did you know anything about the pavements in Liverpool before you left there, did you help lay any or have anything to do with that kind of work?

A. I have never had any of that work to do on contracts or anything of that kind; my work was always building construction, but I have seen it laid and know how it was done.

Q. What kind of pavements did you see constructed while in Liverpool?

A. Paving stone, hard surfaced pavements, concrete pavements, as we called them there, and what they called bitulithic pavement, we used to call them pitch pavements there.

Q. Will you describe what you saw and what you now designate as concrete pavement construction according to your observation?

A. Concrete pavements?

Q. Will you describe what you term concrete pavements according to your observation, what you saw at that time?

A. There the rock was mixed by hand usually then and we put the mixture down on the streets and rolled it, or tamped it where we could not roll it; we used to get it graded of course, and then laid the foundation with the cracked rock or stone, and then put the cement on top of it, very much the same as they do it here.

Q. Are you familiar with the so-called Hassam pavement here?

A. Yes, I have seen it laid frequently.

Q. Will you state whether or not any of the pavement you saw laid there was at all similar to the so-called Hassam pavement laid here, and describe it if so?

A. The only difference between the Hassam pavement and the pavement that I have helped to lay in my boss's yards in Liverpool; he had large yards there; we used to break the rock up with hammers; we would take all the refuse from the buildings and break it up with the hammer and pour cement and sand into that in the same manner the Hassam Paving Company do their work, with this exception: We had to put the cement and sand into the rock before rolling and roll it afterwards, that gave the cement a chance to get all around the rock. The way they do Hassam here, they lay the rock down without wetting it and then they take a roller and compact it by rolling until it loses about one-third of its volume, and then when you come to pour on the sand and cement it does not cover the entire rock, it is not distributed evenly. They would not let us do it that way in the old country.

Q. Was that sand, cement and water a fluid mixture?

A. Yes.

Q. That was poured over the rock?

A. Yes, and we used to take a little hand-roller and four boys would get hold of it and roll it back and forth until it was well rolled and compacted.

Q. In that kind of pavement were the voids or interstices filled with grout?

A. Yes.

Q. And rolled down afterwards?

A. Yes.

Q. That was forty years ago?

A. Yes, and that was done before my time, according to the old methods, the engineers used grouting methods long before my time. You can find that right in history where they mixed the stuff and put it on in very much the same way. It is an old, old method, this grouting, and can be found way back in the history of the Roman Empire; it was used then. Government engineers have used it for years in their construction work. There is nothing new about grouting.

Q. The substance of your statement is that the difference between the method used in the construction of Hassam pavement in Portland and the method used in Liverpool when you were there, that you have referred to, there in Liverpool the rolling was done after the grouting had been poured on, and here in the Hassam the stone is rolled before the grout is poured on?

A. Yes.

Cross-examination by Mr. Charles H. Carey:

Q. You are a carpenter?

A. Yes.

Q. And you served apprenticeship as a carpenter in Liverpool, England?

A. Yes.

Q. How long were you an apprentice?

A. Seven years.

Q. At what age did you begin?

A. Fourteen years.

Q. And then you became a journeyman carpenter?

A. Yes, at 21 years of age.

Q. What was the name of your master?

A. James Ainsworth, Bortle, Liverpool, England. It was a large place on the outskirts. He had a large estate.

Q. How long did you work as journeyman carpenter before you left Liverpool?

A. I left there when I was about 24 years old.

Q. Then you served there as journeyman carpenter for three years before you left?

A. I served three years after my apprenticeship in Liverpool.

Q. Were you contracting for concrete work in Liverpool?

A. No, I never did contracting then.

Q. The experience you have spoken of in your direct-examination in Liverpool was while you were an apprentice working for Mr. Ainsworth?

A. While I was an apprentice and afterwards. I was there about ten years working.

Q. Where was the paving in Mr. Ainsworth's premises that you spoke of assisting to make?

A. Not only on his premises but other places.

Q. I am speaking about this particular piece?

A. It was at Bortle, on the property of Mr. Ainsworth.

Q. Where was this particular piece?

A. There were several pieces around the yard, and work done around the docks in Liverpool also.

Q. The pavement you spoke of on his premises were in the yards?

A. Yes, sir.

Q. How extensive an area was that?

A. Probably 1,000 feet up in front of his house.

Q. How wide was it?

A. Eight to ten feet wide.

Q. Was this all done in one job?

A. No, there were several places. We put down a good deal of sidewalk and basements and so on.

Q. What you did there was to put down some concrete or hard surface walks in front of his premises?

A. Yes.

Q. And also some in the basements of the buildings?

A. Yes.

Q. You do that every day as contractor in Portland, do you not—it is customary everywhere, is it not?

A. To do what?

Q. Used grout for such purposes?

A. Sometimes yes and sometimes no.

Q. In Liverpool you never laid any such pavement as you described except as you were working for Mr. Ainsworth?

A. No, that is all I did there. It is laid there just the same, I can describe the way it is laid and tell you where. All the Liverpool docks where these big grain ships are unloaded from this country are constructed in the same way.

Q. You never did any of it yourself?

A. No.

Q. I am asking about your own experience, will you please answer my questions?

A. You asked me if there were any other places besides Mr. Ainsworth's place, is what I understood you.

Q. I asked you whether you had ever laid any of this kind of pavement yourself except as you worked for Mr. Ainsworth?

A. No, sir, I was not in the contracting business there.

Q. You were a carpenter?

A. Yes.

Q. Were you a concrete worker?

A. No, but the apprentice boys had to do that.

Q. After you became a journeyman carpenter yourself you didn't have to do it?

A. No, sir.

Q. Was all your experience in connection with this pavement in Liverpool obtained while you were an apprentice working for Mr. Ainsworth some 40 odd years ago?

A. Yes.

Q. You have appeared on various occasions as a witness against the Oregon Hassam Paving Company, have you not?

A. Once only.

Q. You have taken quite an active interest against them in this connection?

A. Against the paving company?

Q. Yes.

A. I have, yes.

Q. You have appeared in the newspapers against them, have you not?

A. Yes.

Q. And have been an enemy of the persons concerned in that company since they first began business here, have you not?

A. I am an enemy to nobody, no, sir. When I have appeared I have simply told the facts as they exist.

Q. You are not a paving contractor yourself, are you?

A. No, sir.

Q. You never have laid a foot of pavement in the public streets of Portland under contract with the city, have you?

A. No, sir.

Q. How long have you lived in Portland?

A. Twenty-two to twenty-three years.

Q. What has been your business during that time?

A. Contractor and builder.

Q. The erection of buildings?

A. Yes, sir.

Q. And have never been a contractor for street work?

A. No.

Q. So that your knowledge of the method of laying pavements in public streets is wholly what you have gained as a carpenter and builder and using concrete in and about structures that you have erected?

A. I have seen streets put down and have been

working constantly alongside of streets which were being put down and know just how they are put down. I observe these things, watch them all the time and that is where I gain my knowledge.

Q. Where do you live?

A. 716 Corbett street.

Q. What kind of pavement is laid in front of your premises?

A. Bitulithic pavement.

Q. No Hassam pavement laid in front of your premises?

A. No, sir.

Redirect-examination by Mr. Stearns:

Q. You started to tell something about pavements laid along the Liverpool docks?

A. Yes.

Q. Will you state what you started to say?

A. All the docks there where they unload grain from large vessels have that same pavement I am talking about right now, and it is grouted and rolled just exactly the same way our pavements are made here, which they call Hassam pavements, and that has been done for 40 years or more, and you can read about it in ancient history.

Q. Do you say that as a result of your own observation?

A. Not the ancient history part, but I worked for the Cunard company for about a year before I left there.

Q. Did you see that kind of pavement laid at that time?

A. There was none laid while I was there, but that pavement had been laid for years. They used to unload the grain from the vessels right onto that floor; we used to see them brush it up and clean it and they would put the grain right onto that floor.

Q. Will you state whether you have personally observed pavements and roadways being laid in the same manner as you have described for basements and walks around Mr. Ainsworth's place in Liverpool?

A. The same process exactly was used, the same principle, and grouting was used. I don't know of any difference; of course there might have been some difference as to the proportions of sand or cement and the method mixing; we used to mix by hand, and we used to use hand rollers. But the streets were graded and the mixture was the same and they used to grout it in the same way.

Q. Do you mean you saw other people lay pavements in the vicinity of Mr. Ainsworth's place in that same manner?

A. The only ones I saw were those I helped to lay myself right there. I know they were laid around there and I have driven over them many times.

Q. The same kind of pavement?

A. Yes.

Q. You have been asked by counsel whether you have been hostile to the Hassam Paving Company?

A. Yes, sir. There is no reason for any hostility between myself and any paving company. They have a monopoly for laying pavement here and have cut out everybody else, and that is wrong. That is the only

reason I have for any hostility towards them or any one. Contracts for laying pavements in this city ought to be so anybody could bid on the work according to the specifications.

Q. Are you a property owner?

A. Yes.

Q. Own property in different parts of the city?

A. Yes.

Q. Do you build houses for yourself, to sell?

A. Yes.

Q. Are you a taxpayer?

A. Yes.

Q. Is that the reason why you take an interest in the cost of pavements?

A. Yes. There ought to be competition in every department of that kind of work, and the laying of pavements in this city ought to be open to all. What is called the bitulithic pavement to-day was patented in England in 1832 by Castel, and several streets in Liverpool were laid with it before I came away.

Q. Have you any hostility toward any individual member of the Hassam Paving Company?

A. Not the slightest, don't think I know any of them.

Q. What interest have you in paving matters?

A. Simply to see that the paving is open and free for all to bid on, so we can have competition and consequently less cost.

Q. Simply as a taxpayer?

A. Taxpayer and property owner.

RECROSS-EXAMINATION BY JUDGE CAREY:

Q. You fought the bitulithic pavement in front of your house, didn't you?

A. I did.

Q. And you contended that the bitulithic patents were invalid and that the method of laying bitulithic pavement had been known many years prior to the time those patents were issued?

A. I claimed they have no valid patents on pavements now. They have patented formulas for cement. They use these and specify them in the specifications made by the city engineer. If they use these formulas or a patented name nobody can bid on that work but the company owning that formula or name. Now it is a well-known fact that in a city with the resources claimed here that we should be able to obtain any kind of pavement in the market, but instead of that we are paying for patented formulas while they use the very same material in the same way that it has been used for years.

Q. You think bitulithic was patented in England as early as 1832?

A. Yes. The reason I fought the Corbett street improvement was because we didn't want the street done. Corbett street had been laid with a macadam roadway which had just been put in and the street was as smooth as this floor and in good condition, and there was no necessity for laying another pavement at that time. It had been bonded by most of the people for that improvement and the time had not expired when this new pavement question came up, and they

took up the old pavement and put down the bitulithic pavement when there was no necessity for doing it, and only five years of the bonding act had run and to add ten years to that at an increased price would make a 15-year indebtedness to these people, and that was the reason it was fought. We got 78 per cent. of the people to sign a remonstrance against that added cost.

Q. You have written several articles for the newspapers about these different pavements, have you not?

A. Yes.

Q. And have claimed these patents were void?

A. No, I didn't claim anything of the kind. I said they couldn't hold valid patents on any kind of pavements that are laid as these are laid. They could hold a patent on a formula for the cement, and that the contracts for these street improvements should be open for competition.

Q. You spoke about some concrete work used at the public docks around Liverpool?

A. Yes.

Q. You didn't see that work constructed, did you?

A. No.

Q. And don't know the method used in constructing it of your own knowledge?

A. No, but it was just the same as concrete is laid here.

Q. As far as you could say it looked about the same thing as you had been using yourself?

A. Only much stronger and better, more cement in it.

Q. When you were an apprentice working for Mr. Ainsworth and laid down pavement on his premises, you said something about using a roller, what kind of a roller was it?

A. A roller about two feet in diameter and three feet wide. Four boys would get hold of it and roll it back and forth.

Q. Hand roller?

A. Yes.

Q. Did you have any machines for mixing the ingredients used?

A. No, I don't think they had any then. I did not see any at that time; that was way back in early days, a long time ago.

Q. What you did there was all done by hand by you boys while you were working as an apprentice on the estate of Mr. Ainsworth?

A. Yes; we would break up the stone to the proper size and mix it with sand and water and cement and roll it after it was put onto the street.

Q. The entire job was done by you four boys under the superintendence of a foreman or supervisor?

A. Yes.

Q. That is the only pavement you ever laid in Liverpool?

A. Yes, that is the only pavement I ever laid.

Q. You say this same kind of concrete was used in Rome at an early period—did you see any of that concrete laid?

A. No, I am going by history. You can see it in the history.

Q. You were not there yourself?

A. No, but I can read history and see that it was the very same kind.

Re-redirect-examination by Mr. Stearns:

Q. Counsel asked you about bitulithic pavement. Are you familiar with the laying of bitulithic pavement yourself as you have observed it?

A. Yes.

Q. What is the difference between the laying of Hassam and the bitulithic, leaving off the surface of the bitulithic?

A. None whatever.

Q. Will you describe briefly the process of laying these two pavements?

A. After the roadbed is prepared and brought to a certain grade or sub-grade, then they take crushed rock according to the specifications, of certain sizes, from 1½ inches to 3 inches, or larger, or smaller as the case may be—the rock is about the same size in both cases. Sometimes they use larger rock than the specifications call for and sometimes there are smaller sizes. They take that and lay it down to a depth of, I think the Hassam calls for six inches, according to the specifications, and the standard bitulithic calls for six inches after it is completed; first four inches and then two inches on the top as a dressing. Both bases before filling with cement, in the Hassam and the asphalt, is mixed with crushed rock and they are just the same as to the base. They roll them in both cases quite compactly. With the Hassam they have a kind of a mixer for mixing the sand and cement together, a machine. They pour it onto the rock until they fill

up all the interstices and spaces full to the surface and then that is rolled again, and they go over it or brush it after it is rolled. In the case of the bitulithic they have a mixture, sometimes gravel and sometimes crushed rock, practically the same material for the base as the other. They have a mixture of asphalt and while it is hot they put it on about two inches thick. They roll the base until it is supposed to be six inches deep after it is completed. Four-inch base and a two-inch top dressing and on top of that they put the asphalt mixture.

Q. Do you know whether there is any difference between the filling put on the two pavements?

A. Yes, there is. The bitulithic is similar to the cement grout except it is asphalt or bitumen or coal tar, and in the other case they use Portland cement. It is put on as a kind of a sticker, to cement or stick the crushed rock together.

GEORGE W. GORDON.

J. W. MORRIS, called as a witness on behalf of the defendants, after being duly sworn testified as follows:

DIRECT-EXAMINATION BY MR. JOHN H. HALL:

Q. State your age, residence and occupation.

A. Thirty-nine years of age, 1772 East Yamhill Street, Portland, Oregon, civil engineer.

Q. How long have you followed the profession of civil engineer?

A. Eighteen years.

Q. In what line of that profession?

A. I think every line of it. Railroading, municipal engineering and construction work.

Q. What official position have you occupied in the city of Portland?

A. City Engineer for two years from July 1st, 1909, to July 1st, 1911.

Q. Did you hold that position on and prior to the first day of April, 1910?

A. Yes, from July 1st, 1909.

Q. Do you recall an ordinance adopted by the City of Portland and by the city council and signed by the mayor No. 21,172, entitled "An ordinance in relation to the improvement of streets and declaring an emergency", which was an ordinance defining the manner and setting forth the specifications for the pavement of streets to be followed in the city of Portland?

A. Yes, I recall that ordinance.

Q. Who drew the ordinance?

A. I had considerable to do with it as it was drawn in my office under my supervision.

Q. Were you acquainted with any of the representatives of the Hassam Paving Company?

A. I was acquainted with their manager at that time. I don't recall any of the other members in the company now.

Q. Who was their manager at that time?

A. Mr. George M. Hyland.

Q. Do you recall whether or not in the course of the framing of that ordinance containing the specifications—did it contain the specifications of what was known as Hassam pavement?

A. Yes, it did.

Q. Do you know whether or not that was with the knowledge and consent of the manager of the Oregon Hassam Paving Company?

A. It was.

Q. Do you recall whether or not the manager of the Oregon Hassam Paving Company requested or solicited the incorporation in the ordinance described of the specifications of Hassam pavement?

A. I recollect that Mr. Hyland talked to me on that subject a number of times. It has been some time back but to the best of my memory Mr. Hyland represented to me that Hassam paving was on the streets of Portland, that it had been laid here and would be laid in the future, and as a business proposition he considered that the pavement should now be recognized in this ordinance that I was drawing up at that time.

Q. Were any objections ever made by any member of the Oregon Hassam Paving Company, or any other kindred corporation to that company, to such specifications being incorporated in that ordinance?

A. Not to my knowledge.

J. W. Morris.

Robert S. Edwards, called as a witness on behalf of the defendants and after being duly sworn testified as follows:

Direct-examination by Mr. Hall:

Q. State your age, residence and occupation.

A. Age 35, residence Portland, Oregon, occupation consulting and chemical engineer.

Q. How long have you followed the business of consulting and chemical engineer?

A. Ten years.

Q. For whom have you been employed in that capacity?

A. After graduating at a technical school in Boston I was employed in a Lime-Cement Manufacturing Company, Rockland, in Maine for three years, and during that time I was State Assayer in the State of Maine, operating laboratories for testing material in Boston, under the name of Sherman & Edwards. In 1910 came to Portland, Oregon, to take charge of the inspection of materials for the Portland Railway Light and Power Company in their electrical construction work at Estacada, Clackamas county, in this state. I am now operating an independent testing laboratory for building and construction work and to test cement and concrete under the name of Edwards & Lazelle; I am also inspecting engineer for the Portland Railway, Light & Power Company.

Q. Have you ever made any study of grouting, a manner of mixing and using cement as a grout?

A. I have practically spent the best part of my life since graduating from the university in becoming expert in that work.

Q. I would ask you whether or not outside of the process used by the Hassam Paving Company you are familiar and have been with the process known as grouting?

A. Yes, I am very familiar with that process. In fact have given it considerable study and thought and

time in conjunction with the Portland Railway, Light & Power Company's new dam where I had the proposition come up of solidifying the foundation before we could build the dam. And after investigating the various methods for doing this and the various machines, we decided to use what is known as liquid cement grout forced in the rock under pressure as the only satisfactory existing method to employ to fill up the interstrices or voids in the rock foundation.

Q. I will ask you to describe the process of grouting or mixing of the cement?

A. The process that we used, do you mean?

Q. Yes, the ordinary method used in grouting, if there are different methods please state what they are.

A. The only difference in the method is, sometimes they use a richer grout than other times. The process of manipulation is practically the same. The constituents used in grout are of course cement, sometimes they use it one to one, or one to two—one part sand to one part cement—or one part cement to two parts sand, according to the richness desired. The grout is generally mixed in a mixing machine to a consistency that will flow easily and then placed in tanks which are put under pressure and the grout forced from the tanks through tubes or pipes into the material or rock, or whatever it may be that is going to have its voids filled up or solidified. That is the general process used, and it has been used in several of the largest engineering works, and pieces of construction in the United States. For instance, the Brooklyn-New York subway—their steel cylinders were filled up with loose rock of dif-

ferent sizes, leaving an opening from the cylinders into the interior of the tube and after the steel cylinders were placed they attached these pipes or hose which were connected with the power grouting machines and the grout was forced into the rock until it filled up the voids. The Catskill aqueduct work used practically the same identically process, and several large engineering operations abroad have used it and it has become very common now.

Q. How long has that process been known to engineers?

A. The process probably has been known for at least eight to ten years, probably much longer, but within the eight to ten years it has been used very commonly in engineering work.

Q. In the construction of a street or roadway where it becomes necessary to fill the voids with cement, a pavement that has a rock foundation, would you say it required any amount of skill or technical knowledge to pour the grout on the rock and force it into the voids by pressure from a roller?

A. I would say that was the simplest form that is known in the application of grouting.

Cross-examination by Judge Carey:

Q. What was the first example that you knew of the use of that method you have described?

A. To my knowledge?

Q. The first one known to you?

A. From investigations and works that I have looked up on engineering projects, I think the first example

that came to my attention was a dam in the Arkansas river.

Q. When was that constructed?

A. About 1906-1907.

Q. At what place in that river was that dam?

A. I would have to look that up to tell you definitely. I could find it for you.

Q. Your experience up to the time you worked for the Portland Railway, Light & Power Company on its dam on the Clackamas river was that of a chemist rather than of a constructing engineer, was it not?

A. I am a chemical engineer.

Q. What I mean is, your work was largely laboratory work and not construction work up to that time?

A. No, my work from 1904 until I came out here was a combination of construction work and testing of materials.

Q. What jobs did you ever have charge of as construction engineer prior to the time you came to Oregon?

A. I built three lime manufacturing plants prior to coming to Portland, Oregon.

Q. Where were they?

A. One in California—Davenport near Santa Cruz. The second at Round Rock, Texas, and the third at Harper's Ferry, West Virginia.

Q. Any other construction work you had charge of?

A. No, no particular construction work. I was inspector on municipal work at Boston, and have done a great deal of work of that kind in inspecting and testing materials.

Q. I mean where you had charge of the construction?

A. No, I never had charge of any other construction work, but as far as being a construction engineer is concerned I have been employed on various works as inspecting engineer in charge of the testing of the material which go into constructing the concrete work, cement, and so on.

Q. These lime manufacturing plants that you constructed, were they built of stone or concrete?

A. They had concrete foundations.

Q. And stone superstructure?

A. Generally steel and galvanized iron superstructure.

Q. You used the ordinary concrete mixture in these foundations, did you?

A. Yes.

Q. In your direct-examination you testified to some length about the method of applying this grout, as you termed it, now can you give any instances where machines were used for the purpose of injecting the liquid cement into the interstices or voids between crushed rock as far back as ten years ago, we will say?

A. To my knowledge machines were not used for that purpose any longer ago than ten years; they may have been used, but not to my personal knowledge, but during the ten years of my experience there have been several machines used for placing cement grout in rock foundations and other structures where crushed rock has been used.

Q. Can you tell of any that were used as long ago as ten years?

A. There have been machines in existence, grouting machines, as far back as thirty years ago, used for the purpose of depositing concrete under water through pipes, used for the purpose of filling up voids in crushed rock formations.

Q. That is something different from what we are talking about now?

A. It is absolutely the same process as I consider it. It is forcing a cement mixture into a rock formation which is full of holes to fill up the holes.

Q. Have you ever known that process to be used in laying street pavements prior to 1906?

A. I have known concrete to be used in pavements ever since Portland cement has been used.

Q. I do not speak about concrete—I am asking about the method that you have described?

A. Not by these machines to my knowledge, no.

Q. Are you engaged in any construction work now as constructing engineer?

A. No.

Q. Have you ever had any experience in laying pavement?

A. As construction engineer?

Q. Yes.

A. No, I have never taken a contract to put a pavement down. I was engaged by Kibbe-Welton Co. to supervise their mixture and to do testing for them.

Q. That is the kind of work you do for the Portland Railway, Light & Power Company?

A. I do all their work as far as inspecting the material is concerned, and at present we are retained on similar work at Seattle, and have charge of all the in-

spection work at Salmon Bay where they expect to use over a quarter of a million barrels of cement.

Q. What engineer had charge of the dam on the Clackamas river that you speak of which was built for the Portland Railway, Light and Power Company?

A. Mr. R. Fisher had charge of the actual work.

Q. What other engineer worked there?

A. There was a Mr. Cushman, I think his name was, who worked for Mr. Fisher.

Q. What part of the time were you there?

A. I was there all of the time until it was completed.

O. After you finished as inspecting engineer on that dam what work did you undertake then?

A. I have a large engineering practice here in the city. I have inspected nearly all the materials which have gone into the large buildings here in the city since I have been here.

Q. Your specialty is inspecting the materials as it is being used that go into the structures?

A. Yes, I am a chemical engineer and inspect the materials, the cement and concrete that go into the structures, yes.

Redirect-examination by Mr. Hall:

Q. How long have you been familiar with the process of pouring concrete into broken rock formations for the purpose of filling up the interstices or voids?

A. You mean my actual experience?

Q. Yes, and from your study and reading?

A. Probably for twelve years.

Q. Have you ever studied and read up the history of grouting?

A. I have.

Q. In your reading and studies have you read of the mixing of concrete or cement in a fluid mixture and pouring it into rock formation, or forcing it into the voids or spaces between the crushed rock to fill up the spaces or interstices?

A. Yes, for years back.

Q. Can you give any citations or references on that subject that you can now call to mind?

A. I don't know that I can cite any particular work from memory. The method has been employed so much and it is so common, especially as applied to work under water that it would not be difficult to find many citations or references; pouring grout through a tramie or pipe has been known for years and it is a very common method, and commonly used for pouring the grout or a rich mixture of concrete under water.

Q. What force, if any, is used to force the grout other than gravity?

A. Well, in that particular method, the force of gravity alone when poured through a pipe sixty to seventy feet long, with the weight of the rich mixture in a four or five inch pipe would be sufficient.

Q. Would that be the same in constructing columns or piers?

A. Well, probably some extra force might need to be used in columns, piers and some foundations, and in filling rip-rap in reservoirs and the like. It is a very common method.

ROBERT S. EDWARDS.

Adjourned until November 17, 1912, at ten o'clock A. M.

PORTLAND, Oregon, November 17, 1912.

Parties met, pursuant to adjournment at the same place on this date, and the following proceedings were had, to wit:

Counsel for defendants thereupon offered the following exhibits:

1. Certified copy of letters patent granted to John Murphy, No. 238,706, granted March 8, 1881, for improvement in pavements. Published in the official Gazette, Vol. 19, in March-April, 1881, and now being in the Public Library of the City of Portland, Oregon.

The same was received and marked Defendants' Exhibit "A."

2. Certified copy of letters patent No. 381,667 dated April 24, 1888, for improvement in concrete pavements, granted to George A. Bayard, the same being published in Official Gazette, Vol. 43, page 435, in the Public Library of the City of Portland, Oregon.

The same was received and marked Defendants' Exhibit "B."

3. Certified copy of United States letters patent No. 413,278, October 22nd, 1889, granted to Thomas F. Hagerty, for improvement in concrete pavements, the same being published in Volume 49, page 452, of the Official Gazette, a copy of which is on file in the Public Library at Portland, Oregon.

The same was received and marked Defendants' Exhibit "C."

4. A portion of page 3557 of the Century Dictionary copyrighted 1889-1895 by the Century Company, and reads the same into the record as follows:

> "MACADAMIZATION:
>
> "The process of laying carriage roads according to the system of John Loudan Macadam, Scottish engineer, (1756-1836), who carried it out very extensively in England. In the common process the top soil of the roadway is removed to the depth of 14 inches. Coarse cracked stone is then laid in to a depth of seven inches and the interstices and surface depressions are filled with fine cracked stones.
>
> "Over this is placed a bed laid seven inches deep of road metal or broken stone of which no piece is larger than two and one-half inches in diameter. This is rolled down with heavy steam or horse rollers and the top is finished with stone crushed to dust and rolled smooth."

5. An article entitled "Roads and Streets," Volume 20, "Encyclopedia Britannica," Ninth Edition, published by R. S. Peale Company, Chicago, 1892, the R. S. Peale Company reprint.

For convenience counsel reads the same into the record as follows:

> "ROADS AND STREETS. The earliest roads about which anything definite is known are those of ancient Rome, one of the oldest of which and the most celebrated for the grandeur of its works—the Appian Way—was commenced 312 B. C. Roman roads are remarkable for preserving a straight course from point to point regardless of obstacles which might have been

easily avoided. They appear to have been often laid out in a line with some prominent landmark, and their general straightness is perhaps due to convenience in setting them out. In solidity of construction they have never been excelled, and many of them still remain, often forming the foundation of a more modern road, and in some instances constituting the road surface now used. It is consequently possible, with the help of allusions of ancient writers, to follow the mode of construction. Two parallel trenches were first cut to mark the breadth of the road; loose earth was removed until a solid foundation was reached; and it was replaced by proper material consolidated by ramming, or other means were taken to form a solid foundation for the body of the road. This appears as a rule to have been composed of four layers generally of local materials, though sometimes they were brought from considerable distances. The lowest layer consisted of two or three courses of flat stones, or, when these were not obtainable, of other stones, generally laid in mortar; the second layer was composed of rubble masonry of smaller stones, or a coarse concrete; the third of a finer concrete, on which was laid a pavement of polygonal blocks of hard stone jointed with the greatest nicety. The four layers are found to be often 3 feet or more in thickness, but the two lowest were dispensed with on rock. The paved part of a great road appears to have been about 16 feet wide, and on either side, and separated from it by raised stone causeways, were unpaved side-ways, each of half the width of the paved road. Where, as

on many roads, the surface was not paved, it was made of hard concrete, or pebbles or flints set in mortar."

* * * * * * * *

"The turnpike roads were generally managed by ignorant and incompetent men until Telford and Macadam brought scientific principles and regular system to their construction and repair. The name of Telford is associated with a pitched foundation, which he did not always use, but which closely resembled that which had been long in use in France, and the name of Macadam often characterizes roads on which all his precepts are disregarded. Both insisted on thorough drainage and on the use of carefully prepared materials, and adopted a uniform cross section of moderate curvature instead of the exaggerated roundness given before; but, while Telford paid particular attention to a foundation for the broken stone, Macadam disregarded it, contending that the subsoil, however bad, would carry any weight if made dry by drainage and kept dry by an impervious covering."

* * * * * * * *

"The thickness to be given to a road made altogether of broken stone will depend on the traffic it is intended for. On a good well-drained soil a thickness of 6 inches will make an excellent road for ordinary traffic, and Macadam's opinion that 10 inches of well-consolidated material was sufficient to carry the heaviest traffic on any substratum if property drained has proved to be generally correct.

Whenever it is possible a new road should be finished with a roller. The materials are

consolidated with less waste and wear and tear of vehicles and horses is saved. Horse-rollers if heavy enough to be efficient, require a number of horses to draw them and are cumbersome to use. A ton or a ton and a half weight per foot of width is desirable, and to obtain it a roller 4 feet wide must be loaded to 5 or 6 tons, and will require as many horses to draw it. In Great Britain horse-rollers have to a great extent been superseded by steam road rollers in consequence of the superiority and economy in the work done. A 15-ton roller, 7 feet wide, giving upwards of 2 tons weight per foot, can thoroughly consolidate 1,000 to 2,000 square yards of newly-laid materials per day. The materials should be formed to the proper section, and not more than 4 or 5 inches in thickness; if a greater thickness is required it is better to roll two coats separately. After several passages of the roller any hollows must be filled up with small materials, and the rolling must be continued until it causes no motion among the stones. When this result has been attained the binding material may be added. It should be spread dry and uniformly in moderate quantities and should be rolled into the interstices with the aid of watering and sweeping. Provided that all the interstices in the upper stratum of stones are filled after the stones are thoroughly consolidated, the less binding that is used the better. By using binding in larger quantity, and before the stone is thoroughly consolidated, the amount of rolling required is less.'

* * * * * * * *

"A foundation of cement concrete 6 inches thick was used by Sir John Macneill on the Highgate Archway (London) road on a bad clay bottom, and common lime concrete was subsequently used elsewhere. A bed of lias lime concrete 12 inches thick was laid as a foundation in Southwark Street and on the Thames Embankment, but it is too expensive for a macadamized road under ordinary circumstances."

* * * * * * * *

"Stone for a new road should be evenly broken to a size that will pass every way through a ring 2½ inches in diameter. For repairs, especially when the material is tough, a gauge of 2¼ or 2 inches may be used with advantage, as the stone covers a larger surface, consolidates sooner, and makes a smoother surface. Stone is best broken by hand, but stone-breaking machines have been introduced which supercede hand-breaking to some extent, especially where large quantities of hard stone are to be broken. There is always a certain amount of crushing in breaking by a machine, from which softer stones suffer more, and machine-broken stone is never nearly so cubical, uniform in size, or durable as stone well broken by hand. Broken road material contains about 55 per cent. of solid stone to 45 of void space. In a well-consolidated road the void is filled up by small fragments, detritus, and mud, the result of wear, and specimens of good road surfaces weigh from 93 to 95 per cent. of the weight of the solid stone of which they are made."

* * * * * * * *

"Concrete macadam, formed by grouting with lime or cement mortar a coat of broken stone laid over a bed of stone previously well rolled, has been tried as an improvement on an ordinary macadamized surface, but not hitherto with much success. When cleanliness is of importance, and great durability is not required, tar macadam or bituminous concrete may be usefully employed. It is sometimes made by first spreading a coating of broken stone and consolidating it by a roller, and then pouring over it a mixture of coal-tar pitch, and creosote oil, upon which a layer of smaller stone is spread and rolled in, and the surface finished with stone chippings rolled in. More usually the broken stone and bituminous mixture are well incorporated together before they are spread, the stone sometimes being previously heated. The lower layer, about 4 inches thick, may be of stone broken to 2½ inches gauge, and the next layer, about 2 inches thick, may be of smaller stone. Each layer must be well rolled, and when perfectly solid a thin coating of fine stone or granite chippings is spread over the surface and rolled in."

* * * * * * * *

"A foundation of bituminous concrete is sometimes used where only a thin bed can be laid, in consequence of there being an old foundation which it is undesirable to disturb. It is made by pouring a composition of coal-tar, pitch, and creasote oil while hot over broken stone levelled and rolled to the proper form, and then spreading a thin layer of smaller broken stone over the surface and rolling it in.

It has the advantage that it can be paved upon a few hours after it has been laid."

* * * * * * * *

"Joints simply filled in with gravel are of course pervious to water, and a grout of lime or cement does not make a permanently water-tight joint, as it becomes disintegrated under the vibration of the traffic. Grouted joints, however, make a good pavement when there is a foundation of concrete or broken stone or hard core."

* * * * * * * *

"A concrete foundation for a wood pavement appears to have been first employed in a pavement laid in 1872 in Gracechurch Street by the Ligno-Mineral Company."

* * * * * * * *

"The adoption of a bed of concrete as the weight-bearing foundation of the road marks a new departure, and in all the more recent systems of wood pavement a substantial foundation of concrete is an essential feature. In Norwich, however, a large quantity of wood pavement has been laid on the old street foundation, the blocks being bedded in gravel and sand rammed, and the joints grouted with lime and sand."

* * * * * * * *

"It is now more usual to bed the blocks directly on the concrete, a smooth surface being formed either with the concrete itself or by a floating of cement, and to fill the joints with a grout of cement and gravel."

* * * * * * * *

"Wood pavements of plain blocks on a cement concrete bed are now (1885) laid at from 10s. 6d. to 12s. 6d. per square yard, a considerable reduction on the prices paid for patented systems a few years ago."

* * * * * * * *

"Comparison of Street Surfaces.—The comparative cost of various street surfaces in Liverpool, including interest on first cost, sinking fund, maintenance, and scavenging, when reduced to a uniform standard traffic of 100,000 tons per annum for each yard in width of the carriage-way, is given by Mr. Deacon as follows:

	Per square yard per year.
Set pavement of hard granites..	11½d.
" " " softer granites	1s. 2¾d.
Bituminous Concrete.....	1s. 10½d.
Wood pavement.....	2s. 2¼d.
Macadam, on hand-pitched foundation.....	2s. 11½d.

Taking the standard of traffic at 40,000 tons per annum for each yard in width, the cost of the last three pavements is:

	Per square yard per year.
Bituminous concrete.....	1s. 1½d.
Wood pavement.....	1s. 8½d.
Macadam.....	1s. 11½d.

Asphalt paving may be placed between wood and bituminous concrete in the above order. These comparisons show the high cost of a macadamized surface in a street where the traffic is great. However well it may be maintained, a macadamized street must be dirtier

and dustier than any pavement, though it is superior to them all in safety and to set pavements in the matter of noise. Bituminous concrete or asphalt macadam is cheaper, cleaner, and quieter than ordinary macadam and is sufficiently durable when the traffic is not heavy. For heavy traffic no pavement is so economical as granite sets; but for the sake of quiet and cleanliness a wood or asphalt pavement is often preferable. Asphalt can be kept cleaner than any other pavement and is the pleasantest to travel over; wood, on the other hand, is quieter for the residents, less slippery, and can be laid on steeper gradients."

I read into the record and offer as a part of the testimony in this case the following excerpts from a work entitled, PRACTICAL TREATISE ON LIMES HYDRAULIC CEMENTS, AND MORTARS, by Q. A. GILLMORE, A. M., Lieutenant-Colonel U. S. Corps of Engineers, Brevet Major-Gen. U. S. Army. Fifth Edition, Revised and Enlarged. New York.

D. VAN NOSTRAND, PUBLISHER, 23 Murray Street and 27 Warren Street, 1874. The note found in the title page being dated, Headquarters, Dept. of the South, Port Royal, S. C., June 15, 1863, in which the Author states as follows:

"The experiments and researches, which furnish the ground work for all the original matter contained in the following work, were conducted under the authority of the Engineer Bureau of the War Department, and were completed in the summer of 1861. The manuscript was nearly ready for the publisher at the same time.

Since then, active professional duties have rendered it possible for me to devote even a brief personal superintendence to the publication of the work. I am, therefore, not insensible to the many disadvantages under which its hasty publication is now undertaken. It doubtless contains many defects.

For the method of analysis given in Chapter V., I am indebted to Captain E. C. Boynton, U. S. Army, late Professor of Chemistry in the University of Mississippi. Q. A. Gillmore, Brig.-General.

On Page 250, Section 494: Concrete formed by a paste of cement injected under water.

Some blocks of concrete were made in the harbor of New York, in 1860, in the course of these experiments, by injecting a thin paste of light colored Rosendale cement (without sand) into boxes filled with coarse gravel and pebbles, and submerged in sea-water. The cement was mixed, in some cases with fresh, in others with sea water, in the proportion by volume of 48 of water to 100 of cement powder. It was poured through a thin pipe 1½ inches in diameter and 18 feet in vertical height. The boxes were 5 9/10″ x 5 9/10″ x 36″ clear dimensions, and were perforated with small holes, to facilitate the ejection of the water. At the expiration of some weeks, the boxes were taken from the water, and the blocks removed. The cement was found to have penetrated to the remotest corners of the boxes, and to have filled perfectly the interstices in the gravel and pebbles.

On Page 259, Section 508; under the heading: Memoir of MM. Chatoney and Rivot.

In a memoir submitted to the French Academy

of Sciences in the year 1856, entitled "General Considerations upon Hydraulic Materials used for Constructions, in the Ocean," to which reference is made in other parts of this work, the authors, MM. Chatoney and Rivot, Engineers of Roads and Bridges, are led, as the results of their experiments, to some deductions somewhat at variance with the established usage of European engineers. As many of the points to which they direct special attention can have no practical interest to American engineers, they will not be noticed here.

On Page 259, Section 509: THEY RECOMMENDED PURE CEMENT TO BE USED WITH AN EXCESS OF WATER.

From page 159 of their memoir we quote as follows: We have supposed until now, that the cements should be tempered with a quantity of water just sufficient to obtain the consistency requisite for working it; but, whenever it is possible, it is better to use pure cement in a semi-fluid condition, viz.: with a great surplus of water; in becoming solid, it rejects the water not necessary for hydration, and its texture is much more compact than when tempered to ordinary consistency; it may be said that the molecules, left to themselves in a more liquid medium, arrange themselves better; they are more watery and carry less air with them; for this double reason the mortars are less porous.

On Page 262, Section 515: "PORTLAND" CEMENT USED EN COULIS.

It will be seen that M. Vicat made his trials with the natural cements; M. Chatoney, on the other hand, had reference to the "Portland" cement which had

been used by him "to stop the infiltrations of water under the cut stone of the apron of the Florida Dock, at Havre," the beton on which the apron rested having become so decomposed under the influence of sea-water that the pebbles were no longer bound together by the mortar. The following preliminary experiment was made: A box about six and a half feet long, two and a quarter feet wide, and four inches deep was filled with the pebbles used for concrete, and covered up with a board well loaded down with weights. Into one of the corners of this box was then poured through a vertical tube 1.57 inches in diameter, and 17 feet four inches high a mixture of five parts of Portland cement and two quarts of water. * * * M. Chatoney says: When the box was taken to pieces the cement was found to have penetrated among the pebbles to the extremities of the box, and had transformed them into excellent beton, more compact than could have been made by masons upon a stand. This experiment was deemed so satisfactory that the infiltrations under the dock-apron were stopped by an injection of liquid paste of Portland cement. Some of this cement, which, after completely filling the vacant spaces, had overflowed the apron, and attached itself firmly to the cut stone, was removed and kept in sea-water for testing.

(Note) * * * Some blocks of concrete, noticed in another part of this work, were made in this manner on Governor's Island, New York, in the autumn of 1860.

On Page 278, Section 535: 6th. When cement is to be used without sand, as may be the case when grouting is resorted to, or when old walls are to be repaired

by injections of thin paste, there is no advantage in having it ground to an impalable powder."

The volume from which these excerpts are taken can be found in the library of Lazell and Edwards, and there is also a copy in the possession of Mr. John T. Whistler, both civil engineers of Portland, Oregon.

7. A book entitled "ROADS AND PAVEMENTS" from the Public Library of Portland, Oregon, and entitled on the inside "A Treatise on Roads and Pavements by Ira Osborne Baker, C. E. Professor of Civil Engineering, University of Illinois, author of Masonry Construction, Engineering, Surveying Instruments. Member of the A. S. C. E., Western Society of Engineering, Society for the Formation of Engineering Education, etc. 1st Edition, 3,000. Published by John Wiley Sons, New York, Chapman Hall, Limited, London, England. 1904, Preface dated November 27, 1902, and for convenience counsel reads the said preface, and certain excerpts from the said book in evidence, as the same appear on the next page hereto.

The said Book was thereupon marked for identification Defendant's Exhibit "D".

The excerpts are as follows:

"PREFACE.

The object of this book is to give a discussion from the point of view of an engineer of the principles involved in the construction of country roads and of city pavements. The attempt has been made to show that the science of road making and maintenance is based upon well-

established elementary principles, and that the art depends upon correct reasoning from the principles rather than in attempting to follow rules or methods of construction.

* * * * * * * *

277. Cementing or Binding Power. Binding power is the property possessed by rock dust to act as a cement between the coarser fragments composing a stone road. This property is of the highest value, for the strength of the binder determines the resistance of the road to the wear and tear of traffic more than does the strength of the fragments themselves. It is possessed in a very much higher degree by some varieties of rocks than by others, and its absence is so pronounced in some varieties that they cannot be made to compact under the roller or under traffic without the addition of some cementing agent. This has been studied but little, and only by the Massachusetts Highway Commission, which offers the following tentative conclusion: (Annual Report for 1900, p. 71-2.)

It is difficult to say what brings about this cementation or binding of rock dust. It is clear, however, that with many varieties of rock it is due to several causes. Experiments made on a number of different kinds of rock dust showed that the more finely they were pulverized the higher would be the cementing value when subjected to pressure, both with and without water; and an increase in pressure seems to produce a corresponding increase in cementation. Further than this, in a number of cases similarly made briquettes of the same rock dust give distinct indication that destruction to the bond of cementation by impact bore a definite amount of energy was

required to destroy the bond in each briquette, even when applied in different loads. The inference drawn from such results would be that cementation in such materials is to a considerable extent mechanical,—that is, the interlocking of the fine particles of dust caused by pressure.

Another important fact brought out was, that every variety of rock experimented on gave higher cementing results when compressed while wet, which is analogous to the results obtained by road builders, who almost invariably find that stone screenings compact better when watered before being rolled. This at first led to the belief that this result was entirely due to a chemical change effected by the water; but briquettes made of pulverized glass, mixed with pure alcohol instead of water, gave practically the same results. The only explanation of this fact which at present suggests itself is that any mobile liquid which will wet the fine particles of dust acts as a lubricant, allowing them to come in close contact when under pressure.

By a process little understood, water has the power of attracting the fine particles of rock dust and cementing them together. This is well illustrated when a drop of water falls on a dry hard road surface by the dust immediately buckling into an irregular shape, which is retained until destroyed by some force. On examining one of these little clods after drying, it will be seen that it sensibly coheres. The solidifying of mud by the drying up of puddles of water on clayey soil is another example, and so this same process can be traced even to the clay concretions. These phenomena may be due to totally different causes; nevertheless each is the cementation of rock dust,

brought about by the presence of water, and in each case the finer the dust the more perfect this action. This cementation may be due to chemical action, to physical re-arrangement of the particles, or more likely to a combination of such causes.

278. Although chemical action does not seem to affect the cementing power of stone dust as determined in the laboratory, it is probable that this force plays an important part in the road itself. Many native rocks consist of small bits bound together by a cementing material which was deposited from the water. Pure water will dissolve several of the common constituents of rocks, and its solvent action is materially increased by the acids which it takes up from the atmosphere and from manure and decaying vegetation on the road surface. Water percolating through the road material will dissolve lime, silica, and iron,—common cementing materials in natural rock,—and later deposits them in the interstices of the crushed stone, where they will act as a binding material. This binding action is quite slight, but may have an appreciable effect in maintaining the delicate adjustment of a broken-stone road. This subject has not been investigated, but it is apparently worthy of careful study.

321. The experience at Bridgeport, Conn., is frequently cited to prove that a comparatively thin road is sufficient. Something like 60 miles of 4-inch macadam roads built in that place gave excellent service even under a heavy traffic. The conditions were very favorable for a thin road; (1) the soil was sand or sandy loam, and had fairly good natural drainage; (2) the subgrade was thoroughly rolled with a 15-ton roller; (3) the broken

stone was trap, which is hard and durable; (4) the binder was hard and durable, being either stone dust or siliceous sand, and was free from clay or loam; (5) the binder was worked in until the voids in the crushed trap were practically filled, the effect of frost being thus reduced to a minimum and the soil being prevented from working up from below; (6) the stone was thoroughly consolidated with a steam roller of adequate weight; and (7) the roads were maintained by the system of continuous repairs.

336. Rollers. * * * Classified according to the power employed, there are two forms of rollers: the horse roller, and the steam roller. The horse roller was first introduced in France about 1834, and the steam roller in 1865.

341. Rolling the Stone. Rolling is a very important part of the construction of a broken-stone road. The sub-grade should be rolled to prevent the stone from being forced into the earth. The lower course of the stone should be rolled to compact it, so that the pieces will not move one upon the other under the traffic; and the top course should be rolled to pack or bind the pieces into place, to prevent their being knocked out by the horses' feet. Rolling accompanied by sprinkling is necessary also to work the binding material into the interstices so as to make the surface water-tight.

345. Binding the Road. The interstices between the fragments of stone should be filled with a fine material which will act mechanically to keep out the rain water and thereby keep the sub-grade dry, and also to support the fragments and prevent them from being broken, and which will act physically and possibly also chemically to bind

or cement the fragments into a single more or less solid mass. The proper binding of the stone is the most important part of the construction of a broken-stone road.

The material employed to fill the interstices in a broken-stone road is usually called the binder, and sometimes the filler.

347. Applying the Binder. There is a difference of opinion among competent engineers as to the best method of applying the binding material. Some apply it on the top of each course, and some on top of only the last course. In the first case, all the voids from the bottom to the top of the road are filled with fine material; in the second case, the binder usually fills the voids of the top course only. Those who advocate the first method claim that the whole mass should be filled to prevent the stones from moving under the traffic, and also to prevent the soil from working up from below; while the advocates of the second method claim (1) that filling the top layer is sufficient to hold the stone in place near the surface, (2) that the stones of the lower courses have no tendency to move, (3) that the unfilled voids of the lower course promote drainage, and (4) that as the upper layer wears away, the dust will wash down into the lower open spaces in such a manner as always to keep the 3 or 4 inches just below the surface properly bound. If the stone is hard, or if the lower courses are not thoroughly rolled, applying the binding material only on the top of the last course practically fills the voids to the earth foundation; but of course it is cheaper to apply the filler on the top of each course than to attempt to fill all of the voids by applying it on the top course only. If the stone in the lower

courses is soft, or if the top of the next to the last course is thoroughly rolled, applying the binder on the top fills the voids in the top course only. It is sufficient to fill the voids of the top course.

The binder is applied by spreading a layer of "fines" about half an inch thick over the partially rolled surface. The filler should be dumped upon a board platform, and not directly upon the road surface; and should be distributed evenly over the stone with a shovel. Under no consideration should loam or vegetable matter be allowed to contaminate the stone screenings. After the binding material has been evenly distributed, the surface is then sprinkled and rolled. The sprinkler should have many fine openings, the object being to give a gentle shower rather than a violent flooding. The water washes the fine material into the cavities below, and the roller crushes the small fragments and makes more dust. The rolling also aids in working the binder into the mass; in fact, the binder can be worked in to a considerable extent by dry rolling, and consequently the quantity of water used varies widely with the method of doing the work, but is usually about 4 to 6 cubic feet per cubic yard of stone. Sometimes men with heavy brooms are kept upon the road sweeping the binding material about to assist in working it in, and also to secure a more uniform distribution of it. While applying the screenings care should be taken to pick off any coarse stone—particularly flat ones,—as they do not bind well and their subsequent loosening causes the road to ravel (Sec. 377).

As the rolling and sprinkling proceed, fine material should be added where needed, *i. e.*, as open spaces appear. All the filler should not be put on in the beginning, since a thin layer can be worked in to better advantage than a thick one: and, besides, it is desirable to use only enough to fill the voids.

Occasionally the surface of the road becomes muddy and sticks to the roller. This can be remedied in either of two ways: viz., by sprinkling the roller and keeping it constantly wet, or by keeping the sprinkling wagon immediately in front of the roller and having the binder always fully saturated. The rolling is continued until the water is forced as a wave in front of the roller and until the surface behind the roller is mottled or puddled and is covered with a thin paste. The binding, or the puddling of the surface, can not be done satisfactorily when the surface freezes nightly.

When finished, if the road is allowed to dry and is then swept clean, the surface will be seen to have the appearance of a rude mosaic, the flat faces of the fragments of stone being crowded against one another and the interspaces being filled with the binding material—the latter occupying about half of the area. Such a surface when dry will stand considerable sweeping with a steel broom or brush without fragments of stone being loosened. The water used in construction not only aids in working the binder into the interstices, but also develops the cementing power of the rock dust.

563. Bituminous Concrete. In England a mixture of broken stone and tar, often called bituminous concrete, is sometimes used as a founda-

tion. The only advantage claimed for it is that the pavement may be laid as soon as the foundation is completed and therefore it is more suitable for busy thoroughfares than hydraulic cement concrete. The bituminous concrete is sometimes laid as described in Sec. 709, and sometimes by spreading and rolling the broken stone, and pouring tar* over the surface and then covering that with a thin layer of small stones and finally rolling. This foundation is more expensive and less reliable than hydraulic cement concrete.

Asphalt Macadam.

Asphalt may be used instead of coal or gas tar, but it will not adhere to the stone unless both are at a higher temperature than that of the ordinary atmosphere. For a method of heating and mixing stone and asphalt (see Sec. 600). On account of the expense asphaltic concrete is seldom used for a pavement foundation.

695. Very recently it has been proposed to use asphalt as a binding material for crushed stone, the resulting product usually being called asphalt macadam, but sometimes, and less appropriately, bituminous macadam. Doubtless this use of asphalt has been suggested by a former and similar use of coal tar (see Sec. 700). Asphalt concrete would not be an inappropriate name. There are two slightly different methods of applying the asphalt, both of which have been patented. They will be referred to as Warren's and Whinery's, after the inventors.

696. Warren's Method. * * * Upon the subsoil is placed a 4-inch layer of broken stone which is thoroughly rolled. On this stone foundation is spread a coat of thin asphaltic cement,

which enters the interstices of the stone, holding its fragments together and forming a surface with which the wearing coat will readily and firmly unite. The asphalt macadam consists of a mixture of asphaltic cement and broken stone, the fragments of the latter varying from 1 to 2 inches in the largest dimensions to fine dust. The ingredients of the asphaltic macadam are mixed about as described for the wearing coat of the ordinary asphalt pavement (Sec. 627). The mixture of asphaltic cement and stone is spread, while still hot, of such a thickness as to be 2 inches after being thoroughly rolled with a road roller (336) weighing 15 to 20 tons. On top of the asphalt macadam is spread a layer of asphaltic cement, partly to seal the surface against the entrance of air and water, and partly to bind together the fragments forming the wearing surface. While the surface of the asphaltic cement is still sticky there is spread over it a thick coat of fine stone chips, which are then rolled and the road is ready for traffic.

The finished roadway presents a rough gritty surface, which has more of the characteristics of an ordinary broken-stone road than of the usual asphalt pavement. Less asphaltic cement is required for a given thickness of asphalt concrete than for the asphalt mortar of the wearing coat of the ordinary asphalt pavement, since the larger the fragments of the aggregate the less the per cent. of voids, and consequently the less cement required. It is claimed that no single stone has been dislodged in any of the seven cities in which experimental sections have been built. It is also claimed that asphalt macadam is superior to or-ordinary asphalt pavement, since the angular frag-

ments of the broken stone used in the former are less mobile than the rounded sand grains used in the latter, and hence the cement in the former may be made softer and may also be worked at a lower temperature than in the latter. The softer the asphaltic cement, the more durable it is; and the lower the temperature at which it is worked, the less the danger of damage by overheating it.

697. Whinery's Method. * * * The foundation may be either broken stone or hydraulic cement concrete, depending upon the relative cost of the two and also upon the supporting power of the subsoil. The wearing coat consists of a layer of crushed stone, the voids of which are filled with a mixture similar to that used for the wearing coat of sheet asphalt pavements. Broken stone of properly graded sizes is spread on the foundation to the requisite thickness, which, either before or after it is thus spread, is heated to a temperature of about 300° F. A hot mixture of asphaltic cement and mineral grains is spread over the top of the layer of hot crushed stone in a sufficient quantity to fill the voids in the stone and to level up the unevenness of the surface, the layer being properly graded with paving rakes. Then this operation is completed a steam roller of the asphalt type weighing not less than ten tons is to be operated over the surface until (1) the plastic composition is forced into the voids in the crushed stone, (2) the unevenness of the surface is filled up, and (3) the whole mass is thoroughly compressed and solidified. The roadway is then complete, and after giving it time to become cold and hard the street is opened to travel.

No pavement of this kind has been constructed, but the inventor, an engineer of large experience

in laying asphalt pavements, claims that it will have the following advantages over ordinary sheet asphalt pavements: 1. The first cost will be materially less. 2. It will offer a better foothold to horses. 3. It will be at least as durable as the ordinary sheet pavement. 4. It will not shift under travel and work into waves. 5. It will not crack. 6. It can be repaired more cheaply and with less skilled labor than can the ordinary sheet pavement. On the other hand the asphalt macadam will not be so smooth and probably not so noiseless as the ordinary asphalt pavement.

709. Tar Macadam. Broken stone with a tar binder has been used for road purposes in a comparatively small way in England for twenty or thirty years past; and the experience of Hamilton, Ontario, Canada, with this form of pavement has lately attracted considerable attention in this country. In a general way, two methods have been employed in using tar as a binder for broken stone, viz.: (1) the broken stone is mixed with sufficient tar more or less nearly to fill the voids, and then the mixture is deposited and compacted, the process being very much the same as that employed in laying hydraulic cement concrete; or (2) the broken stone is laid and rolled, and then a layer of tar is added and rolled, the intention being to force the tar into the interstices of the broken stone much as the stone-dust binder is worked into a broken-stone road. The product in the first case could appropriately be called tar concrete, and in the second, tar macadam; and they will be so designated in this discussion. The former seems to be the more common in England, and the latter in Canada. Notice that these two methods are substantially the same as Warren's

and Whinery's method for making asphalt macadam—Secs. 696 and 697, respectively.

711. The Construction. The subgrade is prepared as for a pavement or for the ordinary broken-stone road, and the foundation consists of a layer of broken stone, usually 4 inches thick, which is thoroughly rolled.

In making tar concrete, care must be taken thoroughly to mix the tar and the stone, the former being hot and the latter dry. The mixing is done with shovels on a board platform, the tar being poured over the stone. Each fragment of stone should be thoroughly covered with tar; but more tar than enough to fill the voids is objectionable, since it increases the cost and decreases the durability of the road. Usually 10 or 12 gallons are required for a cubic yard of unscreened stone. The mixture is then placed in the road, and rolled while hot with the usual road roller, sand or dust being sprinkled over the surface to prevent the tar from sticking to the roller. Only a comparatively small amount of rolling is required to consolidate the mass. Not infrequently a wearing coat, consisting of a half inch to 1 inch of tar and screenings, is added on the top of the tar concrete; and herein the two methods referred to above merge one into the other.

In laying tar macadam, the broken stone is rolled until the fragments do not move under the foot in walking over the surface, and then a layer of hot tar is poured upon the surface and is evenly spread over it with brooms or shovels, after which it is rolled. If honeycombed spots appear while the rolling is in progress, more tar is added. After the surface of the layer of broken stone has been thoroughly filled with tar, the surface is

flushed with moderately soft tar, and over this is strewn a thin layer of stone chips about ⅛ to ¼ inch in longest dimensions; and then the surface is again rolled, after which the road is thrown open to traffic.

321. The experience at Bridgeport, Conn., is frequently cited to prove that a comparatively thin road is sufficient. Something like 60 miles of 4-inch macadam roads built in that place gave excellent service even under a heavy traffic. The conditions were very favorable for a thin road; (1) the soil was sand or sandy loam, and had fairly good natural drainage; (2) the subgrade was thoroughly rolled with a 15-ton roller; (3) the broken stone was trap, which is hard and durable; (4) the binder was hard and durable, being either stone dust or siliceous sand, and was free from clay or loam; (5) the binder was worked in until the voids in the crushed trap were practically filled, the effect of frost being thus reduced to a minimum and the soil being prevented from working up from below; (6) the stone was thoroughly consolidated with a steam roller of adequate weight; and (7) the roads were maintained by the system of continuous repairs.

It is agreed and stipulated between counsel that the exhibits offered by defendants shall remain in possession of defendants' counsel until the hearing.

Thereupon the hearing was adjourned until November 23, 1912, at 10 o'clock A. M.

PORTLAND, Oregon, November 23, 1912.

Parties met pursuant to adjournment and the following proceedings were had, to wit:

J. H. JOHNSON, called as a witness on behalf of the defendants, after being duly sworn, testified as follows:

DIRECT-EXAMINATION BY MR. STEARNS:

Q. State your age, residence and occupation?

A. Age 45, residence 20 East 10th street, occupation municipal contracting business.

Q. You live in Portland, Oregon?

A. Yes.

Q. Are you the president of the Consolidated Contract Company?

A. Yes.

Q. Have you had charge of laying street pavement?

A. I have.

Q. Will you describe the mode of laying the pavement which is described or specified in the pleadings as Hassam?

A. Describe the way we have done it, do you mean?

Q. Yes.

A. We start at a good subgrade, establish the grade and roll it smooth, and then we put on seven to eight inches, as the case may be, of crushed rock, three to three and a half inches in diameter—rock that will pass through a three to three and a half inch mesh; of course there will be some smaller rock in with it.

We shake that all up and turn it over and take out all the dirt, and put it on the surface and roll it down thoroughly with a ten ton roller four to four and a half feet wide; we roll that rock and get it as evenly distributed and smooth on top as we can, and go over it with a leveler; we roll that thoroughly with this ten ton steam roller.

Q. How compact is it when you go over it with the ten ton roller?

A. It usually goes down—as I said we put on seven to eight inches of the loose rock on top, and roll that down to about six inches; when we get through rolling it is usually very close and tight and just as compact as you could get it with a roller of this kind. You could almost drive a team over it without disturbing the mass; of course you might jar some of the top pieces loose, but never to any great extent.

Q. Would it be possible to walk over this compact mass without causing any movement in the stone?

A. Oh, yes, as a rule there are no voids at all and the surface is smooth and level and very compact. Walking over it would cause no movement.

Q. I mean by my last question could a person walk over it without disturbing the stone or causing any movement in the surface of the rock?

A. Yes, you could easily. As I said walking over it would not disturb it at all; it looks very smooth and is also very hard. I supposed if you should happen to step cornerwise on one piece, or something like that, you might displace a few pieces, but as a rule that would not happen.

Q. What is the next step?

A. We grout it, by pouring in cement and sand mixed with water. Our contract calls for a mixture of one to two. One part cement and two parts sand. That is made into a thin mixture, the best description I could give of that would be that it is mixed up about as thick as soup, a medium soup.

Q. That is made with sand and cement?

A. Sand, cement and water. We have two tanks one mixing, while the other one keeps an almost constant stream of thin cement grout pouring onto the pavement until it comes up to the surface; the water and cement shows on the surface. When that is done we run over it with a five ton roller back and forth and that leaves the surface somewhat rough; it don't look as smooth as it did before; then we tamp it with iron tampers; tamp the rough spaces all down, and we finish it with big wide wire brooms. The top coating is made richer than the rest of the mixture. We often put more cement in that than we use in the bottom. As the cement begins to set the finisher goes over it with the finishing broom for the purpose of finishing it up, puts on the finishing touches.

Q. Do you put on another layer of stone, or other material, after the first rock is laid?

A. Well, they use a little bit, yes, before it is completed, of what they call inch rock, peastone,—they use a little bit of that.

Q. Is that peastone sprinkled all over the surface to fill up the depressions?

A. It was merely put on to fill up the depressions

or any loose places on top; we usually use the tampers and tamp these places even, and this light roller going over the top has a tendency to shoot up some of the rock, and that we tamp down.

Q. What do you say as to whether or not the mass of the rock is agitated by the five ton roller?

A. No it would not agitate or move the rock any to go over it with the five ton roller after the ten ton roller has been over it.

Q. Do you find, from your experience in laying pavements as you have described, voids in the rocks which have to be filled?

A. Yes, and there is only one way we can cause the voids to be filled up, and that is by pouring in the thin cement which runs in all these voids, and it certainly fills them all up, and is the only way that could be done satisfactorily that I know of now. We pour that material over the top until it stands on top of the street. If it does not fill as it goes down it fills as it comes up. We put that thin grout on until it stands on top of the finished street.

Q. Have you ever seen the bitulithic pavement laid?

A. Yes. They were laying that over in Beaumont when we were putting in the sewer over there. I was there every day while they were putting that down.

Q. What difference, if any, is there between laying the foundation of the bitulithic pavement and the Hassam?

A. There is no difference practically, except the main foundation of the bitulithic is not laid so thick. They put on a two inch top, after they get their base laid.

Q. They have a four inch base instead of a six?

A. Yes, and then on top of the four inches they put two inches more.

Q. Is that the rule?

A. Yes.

Q. What kind of a roller do they use to roll it with?

A. They use a ten ton roller, three wheeled roller, some different than the one we have. They use a tandem roller, too, the same as we use.

Q. How is the bitulithic pavement finished after the foundation is laid?

A. They pour on this plastic material, it is an asphalt, that is poured on hot and goes down through the 4 inch layer of rock.

Q. State whether or not it is rolled after they put that on?

A. Not rolled after the tar is put on. They roll the top after they put that on, however.

Q. At my request did you get specimens of bitulithic pavement and bring it here?

A. Yes.

Q. I show you a piece and ask you if that is the specimen you brought?

A. Yes.

Q. Where did you get it?

A. I got it up on Third and Columbia where they are cutting the pavement to lay a sewer. A piece is broken off on the lower edge which fits into this indentation.

Thereupon counsel for defendants offer said specimen of bitulithic pavement in evidence, and the same is labeled and marked as follows:

> "Bitulithic pavement, Defendants' Exhibit "E," offered by witness J. H. Johnson, November 23rd, 1912, in case of Hassam Paving Company, *et al. versus* Consolidated Contract Company, *et al.* Julia K. Sayre, N. P."

Q. You obtained this sample at Third and Columbia streets, Portland, Oregon?

A. I am not sure whether it was Third or Second and Columbia.

Q. I will ask you whether the street from which you took that piece of pavement is paved with that sort of pavement?

A. Yes, I took that right away from where they cut it out.

Q. Did you also obtain a section of Hassam pavement, so-called?

A. Yes.

Q. Some you have laid yourself?

A. Yes.

Q. Where did you get it?

A. Down on Milwaukee street where we are working now, just fiinshing up a job down there.

Q. Is this the specimen which you obtained and brought here?

A. Yes, sir.

Q. The flat portion is the surface of the street?

A. Yes.

Q. And the rough surface showing the dirt on it is what?

A. It is taken next to the ground.

Thereupon counsel for defendants offer said specimen in evidence and the same is labeled and marked as follows:

"Hassam Pavement, Defendants' Exhibit "F," offered by witness J. H. Johnson, November 23rd, 1912, in case of Hassam Paving Company *vs.* Consolidated Contract Company, *et al.* Julia K. Sayre, N. P."

It is consented and agreed that the two exhibits "E" and "F" may remain in custody of defendants' counsel until the hearing.

Cross-examination by Judge Carey:

Q. You are the president of the defendant company?

A. Yes.

Q. How long have you been president?

A. Since its organization.

Q. Have you had charge of this work you have been describing?

A. Yes, I am one of the company that has charge of the outside work altogether.

Q. Have you in charge the operation or laying of the pavement?

A. Yes.

Q. When did you lay this pavement of which this exhibit "F" is a part?

A. That was laid along about August, 1912.

Q. Since this suit began?

A. Yes.

Q. You took that from Milwaukee Street, did you?

A. Yes.

Q. Your company is laying how much pavement on Milwaukee Street?

A. 28,950.8 yards.

Q. Has the work been accepted by the city?

A. No, we are not quite through. We are just completing it now, and it has not yet been accepted.

Q. You have laid other streets in the city?

A. Yes.

Q. Did you lay them in the same manner?

A. Yes.

Q. What streets?

A. Commercial Street was the first one we laid. That was begun about a year ago last July.

Q. What others?

A. Gantenbein Avenue and a piece on Union Avenue and a short piece of five or six blocks on East Yamhill, and Macadam Street in South Portland.

Q. All these have been laid since this suit was begun?

A. No, I think they began this suit about the time we finished Commercial Street.

Q. How much work did you have on Commercial Street?

A. I am not positive now. It started at Killingsworth Avenue on the north. It has been quite a while ago for me to remember back. If I remember right it was about 22,000 yards.

Q. It was several blocks?

A. Yes.

Q. That was the first street you laid?

A. Yes.

Q. This suit was begun when you first started laying Hassam pavement?

A. Well, it was begun not exactly when we first started, it was a short while after that. I think we had started Gantenbein Avenue, in fact I think we had completed Gantenbein before this suit was commenced.

Q. All of this pavement that you have laid has been laid in the manner you described here in your testimony?

A. Yes.

J. H. Johnson.

Counsel for defendants offer in evidence United States Patent granted to Frederick J. Warren of Newton, Mass., on pavement of roadways, issued June 4, 1901, being No. 675,430, and the same was marked Defendants' Exhibit "G".

It was agreed that said exhibit should remain in the custody of defendants' counsel until the hearing.

Thereupon counsel for defendants offered the following definition of Grout found in Century Dictionary, copyrighted 1889, 1895, 1897, 1898, by the Century Company, publishers note being dated November, 1897. Vol. 3, Droop E. F. G.

Grout. I. n. 1. "A thin coarse mortar poured into the joints of masonary and brickwork. A casing of stone outside, a foot and a half thick, also covered the rubble and grout work of Rufus. Harpers Mag. LXIX. 437."

2. "A finishing or setting coat of fine stuff for ceilings. E. H. Knight."

"II. a. Made with or consisting of grout.—Grout wall, a foundation or cellar-wall formed

of concrete and small stones, usually between two boards set on edge, which are removed and raised higher as the concrete hardens."

"Grout 2 (Grout) v. t. To fill up or form with grout, as the joints or spaces between stones; used as grout."

"If Roman, we should see here foundations of boulders bedded in concrete and tiles laid in courses, as well as ashlar facing to grouted insides."

Athenaeum, Jan. 21, 1888, p. 91.

"The mortar being grouted into the joints and between the two contiguous courses of front and common brick. C. T. Davis Bricks and Tiles, p. 51."

Counsel for defendants offer in evidence Ordinance No. 21,172, passed by the Council of the City of Portland, Oregon, on April 27, 1910, approved by the Mayor on May 4, 1910, Joseph Simon, Mayor, and the same is marked Defendants' Exhibit "H".

Counsel for complainant objected to the offer of said exhibit as incompetent, irrelevant and immaterial, but waives all objection as to the manner or form of making the proof.

Counsel for defendants offers in evidence Sections 374, 375, 376, 377, 378 and 379 of the Charter of the City of Portland, and the same will be produced by Counsel at the hearing.

Counsel for complaint make the same objection as he made to Exhibit "H".

Thereupon further proceedings were adjourned until November 26th, 1912, at 10 o'colck A. M.

PORTLAND, Oregon, November 26, 1912,
10 A. M.

Parties met pursuant to adjournment and the following testimony was taken, to wit:

J. H. JOHNSON, was called and testified as follows:

DIRECT-EXAMINATION BY MR. STEARNS:

Q. Mr. Johnson, it has been testified by one of the witnesses for complainant that for the purpose of properly agitating the grout a steam roller is preferably employed which may be the same as that used for compressing the stone. I wish you would state what your experience has been in regard to agitating the grout with the same roller used for compressing the stone after the stone has been compacted by rolling with a ten-ton roller?

A. That would be most impossible to agitate the grout or to even roll it with a ten-ton roller after the base is wet with the cement, sand and water, from the fact that it bogs itself right into the rock. The weight of the roller or the friction on the wet rock won't go—it won't do at all.

Q. What effect then upon the stone does the grout have?

A. The grout wets the stones and makes them slippery.

Q. What is the reason that you use in your operations a five-ton roller after the grout is on, instead of a ten-ton roller?

A. It is simply to get over the surface. It is lighter and we run it over the surface to smooth it.

Q. What effect does the five-ton roller have upon the mass as respects agitation?

A. It don't agitate the mass at all, just smooths or levels down the top.

J. H. Johnson.

A. B. Fassett, called as a witness on behalf of the defendants, and after being duly sworn testified as follows:

Direct-examination by Mr. Stearns:

Q. State your age, residence and occupation.

A. I live in Portland, Oregon, and am superintendent of the Warren Construction Company.

Q. How long have you been with that company?

A. Nine years, since 1903.

Q. And during that time have you had experience in laying pavement, and if so what kind?

A. Yes, bitulithic and asphalt.

Q. Will you describe the process of laying bitulithic pavement when you first began work for the Warren Construction Company?

Counsel for complainant objects to the question as immaterial.

A. The street is graded out to six-inch grade, and that is covered with a four-inch crushed rock base. The rock is put on graded, rolled and then coated. We don't put the roller on again after the bitulithic cement is put on top. It is not rolled after the top coat is put on. The top coat of crushed rock two inches thick is put on the four-inch base, and that is rolled, and then the coating on top of that.

Q. Was that the process you used when you began laying that pavement?

A. Yes, the same process is used now as was used then.

Q. In preparing the sub-grade is it rolled?

A. Yes.

Q. How heavy a roller?

A. Ten ton.

Q. I think you have already stated that the rock was compressed by rolling?

A. It is.

Q. What size roller do you use for that?

A. Ten tons. We use the same roller.

Q. Mr. Fassett, what has been your experience either from observation or actual work in rolling a rock base that has been wet?

A. It is much more difficult to roll than dry rock. In fact it is almost impossible to roll and get a good surface on a thoroughly wet base.

Q. What kind of a roller do you mean in your last answer?

A. I mean with the same kind of a roller. It would be easier to roll with a lighter roller than with a heavier roller.

Q. What has been your experience and observation as to the agitation of the base after it has been thoroughly rolled with a ten-ton roller if a five-ton roller should be run over it?

A. I don't know that I understand the word "agitation" thoroughly. If you mean compression I should think there would be practically none with a five-ton roller after a ten-ton roller had been over it. I would

say that if it had been thoroughly rolled once with a ten-ton roller a five-ton roller would have no effect upon it.

Q. Would it cause any movement in the mass except on the surface?

A. No, sir; I should say none if it had a good foundation.

No cross-examination.

A. B. Fassett.

J. M. Hartong, called as a witness for the defendants and after being duly sworn testified as follows:

Direct-examination by Mr. Stearns:

Q. Do you reside in Portland, Oregon?

A. Yes.

Q. What is your occupation?

A. Superintendent for Elwood Wiles, of his paving department.

Q. How long have you been engaged in laying pavements?

A. For the last five years.

Q. What kind of pavements have you been laying?

A. I have laid all sorts.

Q. Have you had any experience in rolling crushed stone for pavements?

A. Yes.

Q. How long have you had such experience?

A. About four years.

Q. State what your experience has been with respect to rolling a bed of broken stone after it has been thoroughly compacted with a ten-ton roller and wet?

A. I have always found it practically impossible

to get over a wet rock base with a ten-ton roller, and we have found it necessary to use plank or boards of some kind to get over it.

Q. What sort of roller do you use after the base has been rolled with a ten-ton roller in Hassam pavement?

A. We use a five-ton roller then.

Q. What is your opinion based upon your experience and observation as to the agitation or movement of the mass by a five-ton roller after it has been thoroughly compacted with a ten-ton roller?

A. I would say there would be no perceptible movement.

Cross-examination by Judge Carey:

Q. You speak about being superintendent for Elwood Wiles—do you mean the Consolidated Contract Company?

A. No, sir.

Q. What relation has Elwood Wiles to the Consolidated Contract Company?

A. None whatever that I know of in the actual construction operations. I think he is vice-president but I know nothing at all about the operating end of that company.

Q. You are not employed by the Consolidated Contract Company?

A. No, sir.

Q. Does Elwood Wiles attend to the operations of the Consolidated Contract Company?

A. Not that I know of. He possibly takes an

interest in their work but of course I know nothing about that end of it at all.

Q. What kind of pavement have you laid in 1912?

A. Bitulithic and westrumite.

Q. Have you laid any Hassam?

A. No.

Q. What kind in 1911 and 1910?

A. 1911 bitulithic only, and 1910 asphalt only.

J. M. Hartong.

Portland, Oregon, December 18, 1912.

Parties met pursuant to adjournment.
Present, Mr. Jesse Stearns and Judge Carey.

Mr. Stearns: I offer in evidence the following publication, being the printed report of the City Surveyor of Rochester, New York, to the Executive Board of the said city for the year ending April 4, 1894, addressed to the Honorable, the Executive Board of the City of Rochester, and purporting to be signed by J. Y. McClintock, City Surveyor, dated Rochester, June 1, 1894, the particular part of said report I wish to refer to being found on page five of the said pamphlet, entitled "Concrete Pavement."

Judge Carey: I object to the admissibility of the exhibit offered on the ground that it is irrelevant and immaterial; but I do not object to the form or manner of proof.

The pamphlet referred to was thereupon offered and the same was thereupon marked Defendants' Exhibit "J," and the pamphlet was by the

agreement of counsel left in the custody of the defendants' counsel until the hearing.

Mr. Stearns thereupon read the said portion of the pamphlet offered in evidence into the record as follows:

"CONCRETE PAVEMENT: There are many miles of streets where a cheap pavement is requisite, and where macadam with trap rock would be suitable except that it seems desirable to get rid of the small amount of mud which is usually present, and to have a surface that can be washed off clean. To meet this requirement we tried in 1893 the following on South Fitzhugh street north of the canal. The surface of an existing macadam pavement was picked off and a layer of trap rock, six inches thick in the middle and two inches thick at edge of paved gutters, was put on and thoroughly rolled with a steam roller. After this was done, instead of putting on a binding material and rolling that in as usual, Portland cement grout, one of sand to one of cement, mixed to the consistency of cream was carefully poured in so as to fill all the voids between the broken stone and formed a solid matrix to hold each stone firmly in position. The stone was thoroughly wet just before pouring in the grout. One barrel of cement was used to each 8 7/10 square yards of pavement. After the mortar had set for twenty-four hours, sand was thrown over the surface and water sprinkled upon it, and all travel was kept off it for nine days. This has been down eight months and already shows that the size of stone used was too small; it would all pass through a one and one-half inch ring. The stones are so small that the calk of a horseshoe throws out bodily a stone sometimes. I believe it will be

well to try this again with stones which will pass a three-inch ring and will not pass a two-inch ring. The cost of this pavement was one dollar per square yard."

Thereupon counsel for defendants gave notice that they will take the deposition of J. Y. McClintock of Rochester, New York, on written interrogatories to be submitted to plaintiff's counsel for cross-interrogatories, and that the said deposition will be taken thereunder according to the practice of this court, and for the purpose of taking said deposition and having the same returned, asked for an adjournment until January 21, 1913, at which time the defendants expect to be able to close their case.

Thereupon an adjournment was taken until January 21, 1913, at the hour of ten o'clock A. M.

PORTLAND, OREGON, January 21, 1913.

Pursuant to adjournment the parties met and on account of inability to get the witness to attend at this time the hearing was adjourned until February 8, 1913, at 11 o'clock, A. M., at which time the parties as heretofore were present, and the following testimony was taken:

GEORGE W. GORDON, recalled, as a witness for the defendants herein, and was examined and testified as follows:

DIRECT-EXAMINATION BY MR. STEARNS:

Q. You have been a witness on this hearing before?

A. I have.

Q. Since you were a witness here you have made some statements to me about some work you did in Detroit, will you tell what that work was and when it was done?

A. I was building a house there, about a block and a half north of Woodward Avenue and west of the river, for Henry Engelbert, architect; it was a brick house, and Handler Brothers were the contractors for the brickwork, and I put this very same kind of what is called grout in the concrete basement of that house.

Q. Describe how you did that?

A. They gave us the privilege sometimes in concrete work of taking the old broken brick and stone and breaking them up and using them for concrete work, and we used them in this basement, and after breaking them up we took sand and cement and made a grout and poured it on there, just exactly the same kind of grout that is used now. The broken stone and brick were spread on the basement floor and leveled up after the basement floor was got to the proper grade; they would put down the stakes to get the thickness and after we got the thickness we took the stakes out and poured in the grouted cement.

Q. How was this grout made?

A. Mixed sand and cement together with water and poured it on, and we took a tamper and tamped it well, and we used about equal quantities of sand and cement. It was an ordinary thing to use that sort of grout then and I never thought anything of doing it.

Q. This broken stone and brick covered the whole basement and over that you poured the sand, cement and water mixed together, as you have described?

A. Yes, that is a regular concrete floor.

Q. It extended over the whole basement?

A. Yes, over the whole basement.

Q. When was this?

A. About thirty-two years ago, as near as I can recollect.

Q. Can you remember during what time you lived in Detroit?

A. Yes, I lived there for fifteen years.

Q. Between what periods?

A. I have been here twenty-two years.

Q. Was it before that that you lived in Detroit?

A. Yes, I came direct from there here and have been here twenty-two years.

Q. And this work you have referred to was done while you were living in Detroit?

A. Yes.

Q. Do you recall any other instances in which you laid concrete in the same way?

A. I don't recall any in particular. It was such a common occurrence that I paid no particular attention to it being done. We would take this broken up brick and stone if the architects would let us do that, sometimes there would be an architect who was more particular than others and we could not use it then, but in this case I spoke of they let us use that.

Q. Do you recall any other basements or sidewalks that you did yourself or had anything to do with the laying of where this same combination was used?

A. As I say I never paid any particular attention to it, and I cannot think of any right now. I happened to think of this particular case and told you about it.

Q. You did not mention this to me until after the time you were on the witness stand before?

A. No, it was after that.

Q. Do you remember anything else that would be pertinent to this hearing or this matter?

A. I cannot think of anything else right now. That sort of thing was being done right along, as I say, and I never paid any particular attention to it. It was nothing unusual when we laid that basement in that house that I have told you about.

No cross-examination.

GEORGE W. GORDON.

Mr. Stearns: I have a little further documentary evidence which I wish to introduce at this time.

Judge Carey: Very well, what is it?

Mr. Stearns: It is all taken from this book. The book is not mine, but if I can get possession of it or one like it I will produce it at the hearing, but now wish to identify the portions I wish to introduce.

Judge Carey: Why don't you read the portions into the record?

Mr. Stearns: I will do that. These quotations are taken from a volume entitled "SPECIAL CONSULAR REPORTS. STREETS AND HIGHWAYS IN FOREIGN COUNTRIES. Reports from the Consuls of the United States on streets and highways in their several districts, in answer to a circular from the Department of State. Issued from the Bureau of Statistics, Department of State. 1891. Government Printing office, Washington." I wish to introduce that portion of the report found on page 214 of this book, the same being

a portion of United States Consul Herbert W. Bowen, Barcelona, January 10, 1891, reading as follows:

> "At present several new kinds of pavement are being laid and tested. One kind is an artificial cement pavement, which consists of a hydraulic plaster from 10 to 12 centimetres thick, on which is laid a cover of Portland cement from 4 to 5 centimetres deep, mixed with coarse sand, and then rigidly rolled and compressed. The durability of this pavement is said to be great, and it is well adapted for the use of carriages and bicycles."
>
> I also wish to read into the record a portion of the report of Consul George Gifford, on city streets, Canton, found on page 239 of the same book, as follows: "Macadamized streets are laid on a limestone foundation six inches deep over which is a layer of broken stone rolled down with cement."

I also wish to introduce and read into the record a portion of the report on streets and sewers of Liverpool, by Consul Thomas H. Sherman, found on page 344 of the same book, as follows:

> "Second Class Streets: Excavate or fill in the ground as the case may be, to the requisite level, and remove all surplus material; properly form and trim off the surface; and thoroughly consolidate the same, and then lay a foundation of (*a*) not less than six inches of Portland cement concrete, corporation standard, or (*b*) not less than six inches of bituminous concrete, consisting of clean and angular broken stone, grouted with hot asphalt, com-

posed of coal pitch and creosote oil, covered with chippings, and thoroughly consolidated by rolling with a roller of sufficient weight."

I also wish to introduce and read into the record a portion of the report of Consul L. W. Brown, Glasgow, found on pages 423 and 424 of the same book, as follows:

"BOTTOMING. After the ground has been carefully prepared to the required sections, a bed of the best whinstone metal, 6 inches in depth, broken to pass through a 2-inch ring, shall then be laid over the whole surface of the roadway, be thoroughly grouted with a mixture of the best British bitumen and pitch oil, and thoroughly beaten with a rammer while being grouted, the finished surface to be perfectly smooth. The whinstone metal must be thoroughly dry before being grouted with bitumen." (Page 423.)

"GROUTING: Cement grouting to be composed of one measure of best Portland cement to two measures of clean sharp river sand, all properly mixed."

To the introduction of the above quotations counsel for plaintiffs objected as immaterial.

In the

DISTRICT COURT OF THE UNITED STATES,

For the District of Oregon.

Hassam Paving Company, a corporation, and Oregon Hassam Paving Company, a corporation, Complainants, vs. Consolidated Contract Company, a corporation, and Pacific Coast Casualty Company, a corporation, Defendants.	In Equity Stipulation to Take Deposition.

It is hereby stipulated and agreed by and between the parties to the above entitled suit, that a commission may be issued by the Clerk of the above entitled Court to Erwin S. Plumb, a Notary Public, having his office in the City of Rochester, New York, as Commissioner to take the deposition of J. Y. McClintock, a witness on behalf of defendants, residing in the City of Rochester, and State of New York, upon written interrogatories, direct and cross, and directing the said Commissioner to take said testimony in accordance with the law and practice in such cases, and to attach his certificate to the deposition when so taken,

and return the same forthwith, under his seal, to the Clerk of said Court.

It is further stipulated that the deposition of said witness shall be taken upon direct-interrogatories, on behalf of defendants, hereto annexed, and that cross-interrogatories on behalf of complainants, shall be delivered to the Clerk, and served upon counsel for defendants within.....days from the date hereof, otherwise the deposition shall be taken upon the direct-interrogatories of defendants only; and that the testimony taken as aforesaid shall be subject to the same objections as to competency, relevancy and materiality, as though said witness were present in Court and testifying; that the deposition when returned to the Clerk may be opened and examined by counsel for either party without notice to the other, and may be read by either party upon the hearing and trial of this cause.

Carey & Kerr,
Solicitors for Complainants.

Jesse Stearns & John H. Hall,
Solicitors for Defendants.

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF OREGON.

In Equity.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation,

Complainants,

vs.

CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation,

Defendants.

WESTERN DIST. OF NEW YORK,
County of Monroe, } ss.:
City of Rochester,

J. Y. MCCLINTOCK, a witness called on behalf of the defendants herein, and residing at Rochester, New York, more than one hundred miles from the place where this cause is to be tried, being cautioned and sworn to tell the whole truth, and being carefully examined deposes and says as follows:

First Interrogatory: State your age, residence and occupation.

Answer: 60 years old. Rochester, N. Y., Civil Engineer.

Second Interrogatory: What was your occupation in 1893?

Answer: City Surveyor of Rochester, N. Y.

Third Interrogatory:—If in answer to the last interrogatory you shall state that you were City Surveyor of the City of Rochester, New York, state whether or not you prepared the original report, a printed copy of which is herewith shown you, marked Defendant's Exhibit "J."

Answer: I prepared the original report marked Defendant's Exhibit "J."

Fourth Interrogatory: If in answer to the third interrogatory you shall answer that you did prepare such report, state when such report, Defendant's Exhibit "J" was printed.

Answer: In 1894.

Fifth Interrogatory: If you shall answer that Defendant's Exhibit "J" is a printed copy of your report to the Executive Board of the City of Rochester, New York, for the year ending April 1st, 1894, state whether or not the same was printed under your supervision, and how many copies of said report were printed at that time, if you know.

Answer: It was printed under my supervision and probably one or two thousand copies were issued.

Sixth Interrogatory: If in answer to the last interrogatory you shall state that more than one copy of said report was printed state if you know what was done with such printed copies.

Answer: Copies were sent to engineers, highway officials in nearly every city in the country. One or two copies were filed in the library of the American Society of Engineers and to the city officials of the City of Rochester.

Seventh Interrogatory: If in answer to the last interrogatory you shall state that some of them were distributed to the City officials of the City of Rochester, and to the public, and some were lodged in the offices of the City officials of the City of Rochester, state in what offices some of said copies were lodged, and whether or not you have in your possession a copy of said report.

Answer: There should be some copies now in the office of the Commissioner of Public Works of the City of Rochester or the office of the City Engineer. I have a copy in my possession.

Eighth Interrogatory: Read the paragraph on page 5 of Defendant's Exhibit "J," under the heading "Concrete Pavement," and that whether or not all the facts stated in that paragraph are true of your knowledge.

Answer: All of the facts there stated, are true.

Ninth Interrogatory: If in answer to the last interrogatory you shall state that said facts are true, state how long the pavement described as having been laid on South Fitzhugh Street, north of the Canal, in 1893, remained in use.

Answer: At least four years, and probably five.

Tenth Interrogatory: State of your own knowledge, whether or not any concrete pavement described on page 5 of Defendant's Exhibit "J" or similar pave-

ment, has been laid on any other Streets in the City of Rochester, or elsewhere, since 1893.

Answer: I do not know.

Eleventh Interrogatory: If you shall answer to the last interrogatory that such pavement has been laid on other Streets in the City of Rochester, or in any other city or place, of your knowledge, state when the same was laid, how much, and describe fully the process of laying it.

Answer: I do not know.

Twelfth Interrogatory: State what experience you had prior to 1893 in constructing roads and pavements.

Answer: I have practiced civil engineering since 1869 and up to 1880, was employed on general engineering work, and especially railroad work, and during the time, was for a number of years Chief Engineer of the old original Boston & Maine R. R. and was familiar with the construction of pavements around stations and station yards. I was also familiar later with the experience of the Massachusetts Highway Commission in its early studies, during which time my brother, W. E. McClintock, was a member of that Commission.

Thirteenth Interrogatory: State at whose suggestion the method of laying the concrete pavement described on page 5 of Defendant's Exhibit "J" was used; and state the details in regard to the adoption of the method of laying such pavement as fully as you can remember.

Answer: As far as I know the proposition originated with myself. The impelling consideration came from the fact that I had recently become City Surveyor

and macadam pavements had become so unpopular that it required a vote of fifteen out of sixteen aldermen to pass an ordinance for such pavement in the City of Rochester, because many miles of such pavement had been built here with soft local stone which would usually wear out so as to be scraped off by the Highway Department the following year. I was familiar with what was being accomplished in New Jersey and Massachusetts in the use of trap rock and so making a successful macadam road. Being familiar with the use of cement and being impressed by the possibilities of using Portland cement which then had first been reduced to a price warranting its use in highway construction, it was very natural that I should try it as described. I made a communication to the Board of Aldermen discussing the subject and emphasizing the importance of trying it and asking them to allow me to try it experimentally in the manner described so that all of us could have the benefit of such experiment.

Fourteenth Interrogatory: Do you know, or can you set forth, any other matter or thing which may be of benefit or advantage to the parties at issue in this cause, or either of them, or that may be material to the subject of this, your examination, or the matters in question in this cause? If yea, set forth the same fully and at large in your answer.

Answer: The piece of pavement laid, developed irregular temperature cracks and on one portion of it where the hacks stood in the shade of the court house, the horses would drill holes with their feet in kicking

off flies, etc., so that it soon became a question of how the pavement could be maintained. It was some two and a half years after the pavement was laid, when I left the office of the City Engineer, as it had then become, and as I understand it, some two years after that, when an overhead bridge crossing the canal in the vicinity of such pavement was replaced by a lift bridge and the approaching grades were reduced, it was deemed wise by the city authorities then to cover the new portion of roadway with asphalt, and at that time they also pulled out this short section of cement and substituted therefor asphalt.

Cross-interrogatory one: Referring to the report of the City Surveyor, to which your attention has been directed, the concrete pavement which was tried in 1893 on South Fitzhugh Street, in Rochester, New York, was in the nature of an experiment. Is this correct?

Answer: Yes.

Cross-interrogatory two: The pavement referred to in cross-interrogatory one practically had reference to the resurfacing of a small section of a street, and not to the preparation of a foundation. Is this correct?

Answer: Yes.

Cross-interrogatory three: In applying the layer of trap rock, referred to in said report, was the original foundation left in the street?

Answer: Yes.

Cross-interrogatory four: What was the nature of said original foundation?

Answer: From my information , it was local stone laid in the form known as "telford," that is, it was flat stones set on edge and wedged together, as distinguished from macadam where the stones are broken up into small fragments.

Cross-interrogatory five: How thick was this original foundation?

Answer: From my information it was from one to two feet thick.

Cross-interrogatory six: Was this original foundation removed in applying the layer of trap rock referred to on page five of said report?

Answer: No, it was not.

Cross-interrogatory seven: In this report, this statement is made, "This has been down eight months and already shows that the size of the stone used was too small." Please explain this more fully.

Answer: After eight months' use the horses' calks were picking out some of the individual stones and I became doubtful as to the advisability of going further with it until further experimenting or experience with it. Later temperature cracks developed.

Cross-interrogatory eight: What did the laying of the pavement referred to on page five of said report demonstrate to you?

Answer: It demonstrated that I might have something of practical value, but that I had not carried it far enough or experimented enough at length to demonstrate its practical value.

Cross-interrogatory nine: Did you ever make any effort to introduce or try this pavement anywhere

else except in 1893 on Fitzhugh Street in Rochester, New York?

Answer: No.

J. Y. McClintock.

Subscribed and sworn to before me this 25th day of March, 1913,

Erwin S. Plumb,
Notary Public.

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF OREGON.

In Equity.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation,
Complainants,

vs.

CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation,
Defendants.

WESTERN DISTRICT OF NEW YORK,
County of Monroe, } ss.:
City of Rochester,

I hereby certify that on the 25th day of March, 1913, before me, ERWIN S. PLUMB, a notary public in and for the County of Monroe and State of New York, at my office, No. 613 Wilder Building, in the City of Rochester, County of Monroe, and State of New York, personally appeared, pursuant to the notice hereto annexed, between the hours of ten o'clock in the morning, and five o'clock in the afternoon, J. Y. McClintock, the witness named in said notice and there was no appear-

ance for either the plaintiffs or the defendants, and the said J. Y. McClintock being by me first duly cautioned and sworn to tell the whole truth, and being carefully examined, deposed and said as appears by the deposition hereto annexed. And I further certify that the said deposition was then and there reduced to typewriting under my personal supervision and was, after it had been so reduced to typewriting subscribed by the witness in my presence, and same has been retained by me for the purpose of sealing up and directing the same to the clerk of the Court as required by law.

I further certify that the reason why the said deposition was taken was that said witness resides at Rochester, New York, more than one hundred miles from Portland, Oregon, where this cause is to be tried.

And I further certify that I am not of counsel or attorney to either of the parties, nor am I interested in the event of the cause.

And I further certify that my fee for taking said deposition is Fifteen Dollars and that the same is just and reasonable.

In witness whereof, I have hereunto set my hand and official seal at the City of Rochester, in the County of Monroe and State of New York, this 25th day of March, A. D. 1913.

(Signed) Erwin S. Plumb,
Notary Public.

DISTRICT COURT OF THE UNITED STATES,

DISTRICT OF OREGON.

In Equity.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation,
Complainants,

vs.

CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation,
Defendants.

REBUTTAL PROOFS ON BEHALF OF COMPLAINANT.

WORCESTER, MASS., Sept. 15, 1913.

Met pursuant to notice at the offices of Southgate & Southgate, 25 Foster Street, Worcester, Mass.

Present—LOUIS W. SOUTHGATE, ESQ., for Complainants, JOHN H. HALL, ESQ., for Defendants.

Adjourned by agreement until Tuesday, Sept. 16, 1913, at same place, at 10:30 A. M.

WORCESTER, Mass., Sept. 16, 1913.

Met pursuant to the above-adjourned adjournment.

Present—Counsel as before.

ARTHUR S. BROWNE, a witness called on behalf of complainants, being duly sworn, testifies as follows:

DIRECT-EXAMINATION BY COUNSEL FOR COMPLAINANTS:

Q. 1. Are you the Arthur S. Browne who has already been sworn in this case, and who has testified for complainants?

A. I am.

Q. 2. Have you read the proofs taken on behalf of defendants and examined the exhibits offered in evidence?

A. I have.

Q. 3. Do you find in any of the prior patents or publications offered in evidence by defendants the subject matter of the claims of the three Hassam patents referred to in your former deposition, and please give reasons for your answer?

A. I do not find in any of the prior patents or publications offered in evidence on behalf of the defendants the subject matter of any one of the claims of the three Hassam patents to which I referred in my former testimony.

No one of the prior patents or publications discloses a pavement consisting of hard-rolled uncoated stone and a grouting of cement filling the voids or spaces between the stones, upon which foundation a wearing surface is placed. This is the subject matter of claim one of the first Hassam patent, 819,652.

No one of the prior patents or publications discloses a process of constructing a road or pavement which consists in first laying a foundation of hard-rolled uncoated stone and filling the voids between the stones by a grouting of cement, sand and water, and agitating the mass of stone and grouting so as to expel the air from between the stones and fill the voids with the grouting, a wearing surface being placed on the foundation thus prepared. This constitutes the subject matter of claim 2 of the second Hassam patent, 851,625.

No one of the prior patents or publications discloses a road, pavement or other artificial structure comprising a foundation of hard-rolled stone having a grouting of cement placed thereupon and filling all the voids therein, and a top layer of small uncoated stones pressed into the surface of the grouting before it sets, or a process for laying such a pavement. This constitutes the subject matter of the several claims of the third Hassam patent, No. 861,650.

Before considering in detail the prior patents and publications, I wish to emphasize certain characteristics of the Hassam patents.

In accordance with all three Hassam patents a foundation layer of stone is hard-rolled, so as to reduce the voids to a minimum, thus economizing the grouting, which is the more expensive ingredient. The application of the fluid grouting to the concrete surface makes the mass moist, so that it is readily disturbed by pressure; and being then agitated by rolling the foundation stones are loosened sufficiently to enable the

grouting while still fluid to penetrate between the stones and fill all the voids expelling the air. The result is that a solid foundation is obtained in which the stones are securely cemented together by the cement and the cement and sand occupy all of the spaces between the stones. Substantially a monolithic pavement is produced, approximating the solidity of solid rock. Upon this foundation a wearing surface is placed.

In accordance with the third Hassam patent a foundation is prepared as in the first and second Hassam patents, excepting that the grouting is supplied in such ample quantity as not only to fill all of the voids in the foundation, but to overflow. Onto this overflowing grouting while it is still green or fluid, a surface layer of fine stone is placed and rolled so that the surface layer is bound to the foundation by the grouting. Thus a durable wearing surface is obtained.

No such pavement is disclosed in any of the prior patents or publications in evidence.

I will first consider the prior patents.

Prior Patents.

Murphy 238,706, March 8, 1881. The pavement of this patent is made as follows:

(1) A layer of broken stone or slag is spread to the depth of about six inches. There is no hard rolling of the stone after it is first spread and before anything else is done.

(2) A grout is then applied which is not like the grout of cement, sand and water used in making the

Hassam pavement. The grout that Murphy employs is thus described by him:

> "Lime, ground or slaked (blue lias preferred), twenty per centum; sand, clean and pure, thirty per centum; iron slag or furnace cinders, twenty-five per centum; Portland cement ten per centum; silica, or oxide of iron, ten per centum; cast-iron filings, sulphur, etc., five per centum" (Lines 57 to 64).

(3) *After* the grout has been applied the grouted foundations rolled. This is just opposite to a Hassam pavement. Hassam rolls his foundation of stone so that the voids are reduced to a minimum before the grouting is applied, thus economizing in grout; whereas Murphy applies his grout to the foundation before the rolling takes place, hence requiring an excessive amount of the grout in case it is sufficient to fill all of the voids.

(4) Upon this foundation a layer of pulverized slag and lime mixed with sand (line 35) well saturated with water (line 66) is deposited.

(5) Upon this layer stone blocks are laid in courses to break joints.

(6) The interstices between the stone blocks are partially filled with grout, apparently the same grout as is used with the foundation.

(7) "Clean screenings" (line 43) are then spread over the stone surface until the interstices are filled or

nearly so. This filling is then packed or pressed until it has a depth of one or two inches over the grout.

(8) The blocks of stone are then rammed.

(9) The interstices between the stones are then filled to the top with grouting (apparently of the same composition as used in the foundation), thus making a level surface.

(10) Finally a coating of sand is spread upon the surface.

Obviously, this Murphy pavement and the method of making it bear no resemblance to the Hassam pavement and method.

In Murphy, there is no preliminary hard rolling of the stone foundation before the grouting is applied; there is no grouting whose ingredients are simply cement and sand; there is no agitation or disturbance of the previously hard-rolled stone foundation to insure the grouting flowing into all of the voids and expelling the air; and there is no continuous grouting occupying the voids between the foundation stones and serving to bind the surface layer of small stones to the foundation.

Bayard 381,667, April 24, 1888. It should be sufficient to say about this patent that it does not use a grouting whose ingredients are cement and sand. The pavement of this Bayard patent is made as follows:

(1) The foundation consists of broken stone and ashes or pebbles which is rolled until thoroughly settled.

(2) A second layer is then laid consisting of broken stone, cinders and pebbles mixed with tar. This second layer is from three to four inches thick and it is thoroughly rolled.

(3) Then a third layer from one-half to two inches thick is laid consisting of sand or ashes, small pebbles and coal tar well mixed together. This third layer is consolidated by rolling and its surface is rendered as smooth as possible.

(4) Over this third layer is spread a filling coat consisting of coal tar, resin, and unslacked lime, well mixed together and boiled. This mixture is poured upon the pavement so as to fill all the holes and interstices, and the pouring is continued until no more of the mixture will be absorbed.

(5) "Ordinary surface cement, as Portland, or its equivalent, is now spread over the surface and it is again rolled" (line 43).

(6) Finally fine sand is spread over the surface.

Obviously, this patent and its method of construction bears no resemblance to the Hassam pavement. No grouting is used at all. On the contrary, the interstices are filled with a boiled mixture of coal tar, resin and unslacked lime. As no grouting is employed, it necessarily follows that there is no previously hard-rolled stone foundation, whose small voids are filled with grouting which continues above the surface of

the foundation so as to bind the surface layer of small stones embedded therein to the stone foundation.

Hagerty 413,278, Oct. 22, 1889. The pavement of this patent is made as follows:—

(1) First, either coarse rubble is laid or stone blocks are evenly laid. There is no rolling.

(2) A top coating of a thin grout prepared with sand and cement is applied. There is no rolling. This grout is a mere coating. It is not described as sufficient to fill the voids in case the coarse rubble is employed.

(3) The grout coated road-bed when dry is then coated by washing with hot pitch tar all over the surface. The specification says (line 87), that this washing is not essential in case the surfacing material used has sufficient volatile carbonaceous matter to cause it to adhere without this coating.

(4) Upon this foundation slabs of bituminous sandstone or other concrete asphaltum compounds of a uniform thickness are laid.

(5) "Slabs thus prepared are laid upon a road-bed or sidewalk previously described as close as practicable, and by means of a heavy heated roller are pressed, so that by the heat and pressure applied the edges are caused to unite and the under side to adhere to the pitch-tar coating, thus forming a level homogeneous mass." (Page 1, lines 74 to 81.)

This Hagerty pavement and method bear no resemblance to the Hassam pavement and method. In

Hagerty, there is no preliminary hard rolling of the broken stone foundation; there is no filling of the voids between the stones by the grout; there is no agitation or disturbance of the previously hard rolled stone while the applied grout is still fluid to insure the filling of the voids by the grout with the expulsion of air; and no overflowing of the grout in which the surface layer of fine stones is embedded and by which such surface layer is united to the foundation.

Warren 675,430, June 4, 1901. No grouting is used in the pavement of this patent, and hence it cannot disclose the subject matter of any of the Hassam claims. The Warren pavement is made as follows:

(1) "The foundation layer or stone may be of the macadam order or the Telford arrangement, or a combination of the two, and it is laid in the usual way." (Page 1, line 52).

(2) On this foundation "is arranged the layer D of smaller stone, which preferably are coated or partly coated with coal tar, coal tar pitch, asphalt, or a mixture of them or other equivalent bituminous material" (page 1, line 55). This layer "is thoroughly rolled and will, when laid, furnish a surface which is coarse and of a constituency which is more or less cellular in character" (page 1, line 63).

(3) Upon the prepared surface is then thoroughly rolled a heavy layer of specially prepared ingredients. Concerning this layer the specification says:—

> "It is composed of a mixture of relatively coarse particles one-half inch to three inches

> in diameter, intermediate particles one-tenth inch to one-half inch in diameter, and fine particles (an impalpable powder), to one-tenth inch in diameter, suitably proportioned, graded, and thoroughly mixed, either hot or cold, with an incorporated composition of coal tar, coal-tar pitch, asphalt, or other equivalent bituminous material or a combination of them." (Page 1, lines 90 to 100).

(4) "The surface of the road-bed may or may not be covered with a thin coating of bituminous mixture of sand, gravel, screenings, or gravel mixed with coal-tar or other equivalent mixtures" (page 2, line 31).

As a modification, the specification says:—

> "The concrete mixture which I have described may also be used as an intermediate or binder course between hydraulic-cement, concrete, bituminous-concrete, or broken-stone foundation and the wearing-surface of an ordinary asphalt pavement and is an improvement on binder courses previously used, for the reason that it forms a more solid and impervious binder course" (page 2, lines 80 to 89).

No grouting is employed. There is no preliminary hard-rolling of the foundation stone to make small voids which are filled by grouting; there is no agitation or disturbance of the previously rolled foundation stone while the applied grout is still fluid so as to insure the filling of all the voids and the expulsion of the air; and there is no overflowing above the surface of the foundation into which overflowing grouting the surface layer of small stone is embedded, and by means of which the surface layer is bound to the foundation.

Prior Publications.

(1889-1895)

Century Dictionary. This dictionary defines grout and macadamization. In the description of making a Macadam road there is no reference whatever to grout, much less a description of the Hassam pavement and process.

Practical Treatise on Limes, Hydraulic Cements and Mortars by Q. A. Gillmore (1874). No one of the extracts from this Treatise which have been read into the record on behalf of defendants describes a pavement or a process or method of making a pavement. It does describe the making of blocks of concrete.

On page 250, section 494, is described the making of blocks of concrete in the Harbor of New York in 1860, "by injecting a thin paste of light colored Rosendale Cement without sand, into boxes filled with coarse gravel and powders, and submerged in sea-water." No preliminary hard rolling of coarse gravel and pebbles is described; cement without sand was used; there was no rolling, agitation or disturbance of the previously rolled foundation after the grout had been applied to insure the filling of the voids; and there was no overflowing grout in which a surface layer of small stones were embedded, and by means of which such a surface layer was united to the foundation.

On page 262, section 515, a similar experiment is described. What I have just said with respect to section 494 applies to section 515.

Special Consular Reports. Streets and Highways in Foreign Countries (1891). The extracts from this book which have been read in the record on behalf of the defendants describe several pavements.

On page 214 of the Reports is thus described one kind of pavement:

> "One kind is an artificial cement pavement, which consists of a hydraulic plaster from 10 to 12 centimetres thick, on which is laid a cover of Portland cement from 4 to 5 centimetres deep, mixed with coarse sand, and then rigidly rolled and compressed. The durability of this pavement is said to be great, and it is well adapted for the use of carriages and bicycles".

This pavement bears no resemblance to the Hassam pavement and method. There is no foundation layer of broken stone which is hard rolled to reduce the voids to a minimum, the foundation being hydraulic plaster; there is no grouting which fills the voids in the foundation, but instead there is a "cover" of Portland cement and sand; there is no agitation or disturbance of a previously hard-rolled stone foundation, while the grout is still fluid so as to insure the filling of all of the voids and the expulsion of air; and there is no overflowing grout in which a surface layer of fine stones is embedded and by means of which such surface layer is united to the foundation.

On page 239 of this same book it is stated:

> "Macadamized streets are laid on a limestone foundation six inches deep over which is a layer of broken stone rolled down with cement".

This meagre description contains no suggestion of the Hassam characteristics which I have just enumerated.

On page 344 of this same book is described a foundation for a pavement of "not less than six inches of Portland cement concrete, corporation standard". No description is given of how the pavement is made or laid. Also in the same sentence is described a foundation of a "not less than six inches of bituminous concrete, consisting of clean and angular broken stone, grouted with hot asphalt, composed of coal pitch and creosote oil, covered with chippings, and thoroughly consolidated by rolling with a roller of sufficient weight". This pavement does not use a grouting of cement, but is a coal-tar pavement. There is no preliminary hard-rolling of foundation stone; no filling of the voids with grout; no agitation of the surface to insure thorough filling; and no overflowing grout on which a surface layer of fine stone is laid and by means of which such surface layer is united to the foundation, these features being characteristic of the Hassam pavement and process.

The final description of a pavement on page 423 under the title "Bottoming" has reference to a pavement in which the foundation consisting of "whinstone metal" is grouted with a mixture of bitumen and pitch oil. There is no preliminary rolling; no grout in which cement is an ingredient; no agitation to insure the filling of the voids in the previously rolled stone; and no overflowing layer of grout in which the surface layer of fine stone is laid, and by means of which such surface is united to the foundation.

Encyclopedia Britannica (1892). The extracts from this encyclopedia read into the record on behalf of the defendants after describing the roads of Ancient Rome, and the Telford and Macadam pavements, refers to "concrete and tar Macadam". The concrete Macadam is thus described:

> "Concrete Macadam formed by grouting with lime or cement mortar, a coat of broken stone laid over a bed of stone previously well rolled, has been tried as an improvement on an ordinary Macadamized surface, but not hitherto with much success."

In accordance with this meagre description it is apparent that the grouting is not applied to the foundation bed of stone, but is simply used with the superimposed coating of broken stone. There is no description of how the grouting and the broken stone are incorporated with each other. So far as this description goes, it might be done in the manner referred to in the first Hassam patent, 819,652, where it says:

> "Roads constructed of concrete or stone and cement mixed before they are laid also crumble and break up in time because the presence of the partly-hardened cement between the stone when the mixture is laid prevents the stone from being brought close together by compression, but causes comparatively large cement-filled voids to be left between said stone, and said cement soon disintegrates because it was necessarily disturbed in setting by the mixing operation" (Page 1, lines 26 to 37).

There is no suggestion in this Britannica article that the voids in the foundation are filled with the grout; or that the foundation is preliminarily rolled and the grout forced thereinto by agitation; or that the grout overflows the foundation and serves as the intermediary for uniting the surface layer to the foundation, thus lacking the salient characteristics of the Hassam pavement and process.

The Britannica article then describes a tar macadam pavement in which there is no grouting which contains cement, but a mixture of coal tar with creosote oil. This necessarily lacks the grouting employed by Hassam, and does not have the characteristics of the Hassam pavement and process to which I have just referred.

Rochester Pamphlet (1894), Defendants' Exhibit "J." The description of this pamphlet under the heading "Concrete Pavement" has been read into the record on behalf of the defendants. This describes not the making of a foundation for a pavement, but the making of the surface of a pavement. This description, after referring to the removal of the surface of an existing macadam pavement, says:

> "* * * * * a layer of Trap rock 6 inches thick in the middle and 2 inches at edge of paved gutters was put on and thoroughly rolled with a steam roller. After this was done, instead of putting on a binding material and rolling that in as usual, Portland cement grout, one of sand to one of cement, mixed to the consistency of cream, was carefully poured in so as to fill the voids between the broken stone and form a solid

matrix to hold each stone firmly in position. The stone was thoroughly wet just before pouring the grout. One barrel of cement was used to each 8 7-10 square yard of pavement. After the mortar had set for 24 hours, sand was thrown over the surface and water was sprinkled upon it and all travel was kept off it for nine days. This has been down eight months and already shows that the size of stone used was too small; it would all pass through a one and one-half inch ring. The stones are so small that the calk of a horseshoe throws out bodily a stone sometimes."

This does not describe the pavement of the first Hassam patent, No. 819,652, because it relates solely to the surface of the pavement. Claim one of the first Hassam patent relates to a foundation upon which a surface is placed.

This description does not describe the process of claim two of the second Hassam patent, No. 851,625, because there is no description of agitating the stone after the grout has been applied and is still fluid, so as to insure the filling of the voids in the stones and expelling the air, which is characteristic of claim two of the second Hassam patent, and which also requires an additional surface.

Nor does it describe the road, pavement or artificial structure of the third Hassam patent, No. 861,650, or the pavement thereof, since that involves the grout overflowing the foundation, and the embedding therein of the surface layer of fine stone, thereby uniting the surface layer to the foundation.

Roads and Pavements, by Ira Osborne Baker (1904). The various sections of this book which have been read into the record on behalf of the defendants first describe the cementing or binding power of rock-dust, which is used between the coarser fragments of a stone road, the rollers employed, the way a broken stone road is rolled, the filling of the interstices between the stone, and applying material usually called the binder, and sometimes the filler, and the application of the binder or filler to the stone. All of this is contained in paragraphs 277, 278, 336, 341, 345 and 347, which say nothing about a grouting of which cement is an ingredient, and do not suggest the several characteristics of the Hassam pavement which I have heretofore emphasized.

Section 563 describes "bituminous concrete" involving a mixture of broken stone and tar substantially similar to what is described in the Encyclopedia Britannica to which I have already referred. This section, referring to a foundation of bituminous concrete, says that it is "more expensive and less reliable than hydraulic cement concrete." The same article refers to the employment of asphalt instead of coal tar, and states that "on account of the expense, asphaltum concrete is seldom used for a pavement foundation."

Section 695 refers to the use of asphalt as a binding material for crushed stone.

Section 696 describes "Warren's method." The method here described is substantially that of the War-

ren patent No. 675,430, June 4, 1901, which I have already discussed.

Section 697 describes "Whinery's Method." This describes a foundation of broken stone of hydraulic cement concrete, and a wearing coat of crushed stone and a mixture similar to that used for the wearing coat of sheet asphalt. The broken stone is heated to a temperature of about 300 degrees F., and a hot mixture of asphalt cement and mineral grains is spread over the top of the layer of the hot stone in a sufficient quantity to fill the voids in the stone and to level up the unevenness of the surface, the layer being properly graded with paving rakes. The operation is completed by the steam roller. This section says that no pavement of this kind has been constructed. Section 709 describes two ways of making tar macadam. In accordance with the first method "broken stone is mixed with sufficient tar more or less nearly to fill the voids, and then the mixture is deposited and compacted," the article stating "the process being very much the same as that employed in laying hydraulic cement concrete." In accordance with the second method "the broken stone is laid and rolled, and then a layer of tar is added and rolled, the intention being to force the tar into the interstices of the broken stone much as the stone binder is worked into a broken stone road."

Section 711 of this book refers to the preparation of the subgrade and to the making and laying of tar macadam.

Section 321 of this book describes the making of four-inch macadam roads at Bridgeport, Conn. Broken

stone was used and a binder of stone dust or siliceous sand, which was worked in until the voids in the crushed stone were practically filled, the stone being thoroughly consolidated with a steam roller of adequate weight.

None of the extracts of this book describe the Hassam pavement or method. There is no description of a foundation consisting of broken stone, rolled hard to reduce the voids to a minimum; or the filling of the voids with grout in which cement is an essential ingredient; no agitation of the previously rolled stone after the grout has been applied and is still wet, so as to completely fill the voids and expel the air; and no overflowing of the grout in which the surface layer of small stone is embedded and which unites such surface layer to the foundation.

These are all the prior patents and publications, and no one of them discloses the subject matter of the claims in controversy of the three Hassam patents in suit.

Adjourned until to-morrow, Wednesday, Sept. 17, 1913. Same place.

WORCESTER, Mass., Sept. 17, 1913.

Met pursuant to adjournment.

Present:—Counsel as before.

CROSS-EXAMINATION OF MR. BROWNE BY DEFENDANTS' COUNSEL:

x-Q. 1. Mr. Browne, the patent that you have described as the first Hassam patent, 819,652, was originally intended as a foundation only upon which any kind of a wearing surface, such as brick, stone block, sheet asphalt, or other material, might be placed, was it not?

A. In part I agree with your statement. That is to say, the novelty lies in the foundation, although a super-imposed wearing surface is made an essential feature of the combination of claim 1.

x-Q. 2. What addition or improvement was made in the second patent, 851,625?

A. Agitating the previously rolled foundation after the grout had been applied and while it was still fluid, thereby filling all of the voids and expelling the air.

x-Q. 3. What is contained in the third patent, 861,650, that is not contained in the two prior patents that you have just referred to?

A. Using sufficient grouting so that it overflows or covers the foundation and embedding in this overflowing grouting while still wet a surface layer of fine stone, which are thereby united to the foundation.

x-Q. 4. What thickness of the fine stone you have just referred to, is to be applied?

A. The patent does not state in inches what the thickness of this surface layer is. The patent does say that the foundation may be six inches deep when rolled and assuming that this thickness of the foundation is illustrated in Fig. 2, the illustrated surface appears to be about one inch thick.

x-Q. 5. What do you understand to be the meaning of the word "grouting" or "grout"?

A. I agree with the Century Dictionary definition quoted in the record.

x-Q. 6. Then there was nothing new or novel in the making of a grout consisting of Portland cement, sand and water, was there?

A. No.

x-Q. 7. How long did you know, prior to the application for the first Hassam patent, was the process of grout by pouring in extra sand, cement and water upon broken rock, slag, or other material for the purpose of forming a concrete, been known or used?

A. At least as early as the Hagerty patent, 413,278, Oct. 22, 1889, which was about 16 years before the first Hassam patent. There may be earlier instances, but this is the earliest one shown by the publications and patents in evidence, and I have no earlier instance in mind.

x-Q. 8. The use of fine pea stone for the top surface or finishing of a road has been used for a great many years, has it not, dating back to the construction of Macadam and Telford pavements?

A. Yes.

x-Q. 9. You referred in your direct testimony to the "wearing surface" as applied to the Hassam pave-

ment. What part of this pavement do you allude to as the "wearing surface"?

A. In accordance with claim one of the first Hassam patent there is a "suitable surface" and the specification refers to brick, stone, or wood block, or fine broken stone or gravel. In speaking of this first Hassam patent I had reference to such surfaces when speaking of the "wearing surface."

Claim 2 of the second Hassam patent specifies placing "a surface" on the foundation and the specification says that any suitable surface may be used, but it prefers "to use another layer of grout on it, preferably thicker, with fine stone".

The third Hassam patent calls specifically for a surface of pea stone embedded in a continuation of the grouting which fills the voids of the foundation.

It is these several finishing surfaces to which I referred. Perhaps "finishing surface" would be a more appropriate term.

x-Q. 10. Mr. Browne, you stated in your first direct examination in this case, as I recall, that you were retained by the Hassam Paving Company as an expert upon patents?

A. Yes.

x-Q. 11. Do you still occupy that position?

A. Yes. I do not have a general retainer, but I am retained in this case, and have been retained in other cases for them.

Cross-examination closed.

ARTHUR S. BROWNE.

Prof. Arthur W. French, being called as a witness on behalf of complainants, and being first duly sworn, testified as follows:

Direct-examination by Counsel for Complainants.

Q. 1. What is your name, age, residence and occupation?

A. Arthur W. French; age, 45; residence, Worcester, Mass.; occupation, Professor of Civil Engineering at the Worcester Polytechnic Institute.

Q. 2. Please state what, if any, experience you have had with concrete and the testing of the same?

A. I was graduated from the Thayer School of Civil Engineering of Dartmouth College, Hanover, N. H., in 1892. I followed the occupation of civil engineering three years thereafter and have had charge of many buildings and foundations in which concrete was used. In 1895 I went back to Dartmouth College as Assistant Professor of Civil Engineering. I was there three years. I then had a year in paper mill construction, in which concrete is largely used. I then came to Worcester Polytechnic Institute in 1889 and have since that date occupied the Chair of Civil Engineering. During the past fourteen years I have done a large amount of work as consulting engineer in concrete construction. I was superintendent for the contractors for the Harvard Stadium, which was built out of concrete. I have had charge of numerous engineering plants involving concrete, one of the largest being covering the canal at Lowell, Mass. I have

made a great many tests of concrete and a great many plans have been submitted to me for approval. The Building Department of Worcester employs me as expert to pass upon concrete buildings. I am familiar with the use of concrete in road work and have followed and examined the methods of making concrete roads for many years. I have testified as an expert in court on concrete construction.

Q. 3. Do you understand the ordinary method of making concrete roads, and, if so, will you please state what it is?

A. If the concrete is to be mixed by hand, the ordinary method employed is to put the desired amount of cement and sand on a mixing board. These may be mixed together dry, but more usually this mass is soaked with water and thoroughly mixed with shovels. Then the desired amount of crushed stone is added and the mixing is continued by shoveling until each piece of stone is coated as nearly as possible with cement, sand and water. Sometimes a machine mixer is employed in which the cement, sand, rock and water are put in together and then the ingredients mixed to get the same result, namely, as thoroughly as possible coating of the broken stone with mortar composed of cement, sand and water. The material prepared in this way is then shoveled on the road bed and given the desired grade and leveled. Sometimes it is simply spread and left on the road. In other instances it is tamped by workmen using hand tampers. I have never seen a steam roller employed for this purpose and believe great difficulty would be found in attempting such

a step, owing to the slippery, unstable condition of the mass. The mixture is allowed to stand in the roadbed the necessary length of time, usually a number of days, until it sets into a hard, so-called concrete.

Q. 4. Are you familiar as an engineer with the so-called "Hassam Process" of making a concrete road, and if so, will you please describe this process as you have seen it practiced?

A. I am familiar with the so-called "Hassam Process," and have seen the so-called Hassam roads constructed a number of times. As I understand this process, it is substantially as follows:

After the road is leveled or graded, naked, uncoated broken stone is spread upon the roadbed to a desired depth, say six inches; then a steam roller is passed over the naked stone to crush the same down so as to bring the crushed stone into as intimate contact as possible and to reduce the voids to a minimum. A steam roller can be run over naked or uncoated stone. Grout, which is a fluid, creamy mixture made up of cement, sand and water, is then poured over the crushed, naked bed of stone so as to fill up the interstices therein and a steam roller is passed over the grouted crushed stone so as to agitate the same and provide for perfect permeation of the grout into the stone bed. This can be easily done because the mass being in a pasty condition, the pieces of stone can rock or slip on each other so as to loosen up and allow the grout to pass down into the same. The steam roller can be passed over the slippery grouted rock, as it has been previously crushed and set mechanically by the

passage of the steam roller over the stone when it was in its naked condition. Pea stone is then usually sprinkled on top of the roadbed so that the grout will hold and lock the same and make a top wearing surface. This is also rolled. The roadbed is then allowed to stand until it solidifies.

Q. 5. Have you made tests to determine the relative strength of concrete such as is employed in road beds made by what you have described as the common or old method, and also by the Hassam method, and if so, will you please give the results of such tests.

A. At the request of the Hassam Paving Company I have conducted such tests. On May 10, 1913, ten beams were made under my direction in the yard of the Hassam Paving Company of Worcester. One-half of these specimens were made by the ordinary hand mixing method, tamping the concrete by hand tampers, and one-half of these specimens were made by the Hassam method, that is, rolling naked stone, grouting the same after rolling, and agitating the same with a roller during grouting. When the specimens were made by the old process I assisted and took part in the tamping myself and directed it so it would be as fair a test as was possible. The materials employed were the same for both sets of beams, namely, two-inch broken stone, ordinary bank sand, and Lehigh Portland cement. The Hassam specimens were made of grout made in the proportion of one part cement, one part sand and sufficient water to make the grout of a creamy consistency. The specimens made by hand had the voids of the stone filled with a mortar

composed of one part cement, two parts of sand, and water sufficient for a good mixing. Exactly the same quantity of cement entered into the five specimens made by the Hassam process as into the five specimens made by the hand process. The additional sand in the hand process was made necessary by the larger voids in those specimens. All specimens were kept covered and damp for twenty-seven days, when they were taken to the testing laboratory of the Worcester Polytechnic Institute in the molds. All beams were furnished with a hard plate through which the centering loading was applied.

The following is a tabulation of beam test:

TABULATION OF BEAM TESTS.

All beams tested with a center load on a span of 3 ft. 6 in.
A = Hassam beams. B = Hand mixed beams. Age, 30 days.

No.	Size of Cross Section	Ultimate load Center.	Bending stress per sq. in.	
A1	12 x 6.5	3950	489	
A2	12 x 6	3150	459	
A3	12 x 6.25	4586	618	
A4	12 x 5.75	3812	730	
A5	12 x 6	1372	200	# Poor specimen.
Average of five		3374	499	
Average of four		3874	574	
B1	12 x 6	2840	414	
B2	12 x 6.25	2980	401	
B3	12 x 6	3230	471	
B4	12 x 6.25	2747	370	
B5	12 x 6.25	3173	426	
Average of five		2994	416	
" four best		3056	430	

Comparison Hassam $\frac{574}{430} = \frac{133}{100}$

Hand

Determination of specific gravity and unit weight.

Hassam	sp. gr. = 2.63	Weight per cu. ft. = 164 lbs.	104
Hand mixed	2.53	158 "	100

This shows that the Hassam concrete was 33 per cent stronger to resist bending strain than the ordinary concrete. After the beams were broken in this manner, as many blocks as possible were cut out of the broken sections so as to make tests for compression or crushing. The following are the results of the tests made to resist compression:

Tests on Hassam and Hand-made Concrete Blocks.

No.	Age 3 months Size ins.			Area sq. in.	Compression First Crack Lbs.	Lbs. per sq. in.	Ultimate Lbs.	Lbs. per sq. in.
A1	4.5	x 6.0	x 4.0	27.0	24,040	890	218,700	8100
A2	5.0	x 5.7	x 4.8	28.8	121,700	4230	154,040	5358
A3	4.5	x 6.0	x 3.25	27.0	192,000	7110	236,080	8740
A4	3.87	x 5.5	x 4.0	21.3	84,660#	3970	#120,400	5658
A5	4.6	x 5.8	x 4.5	26.6	150,880	5670	180,520	6787
A6	4.6	x 5.35	x 4.5	24.6	110,940	4520	144,640	5880
A7	4.9	x 5.7	x 5.0	28.0	160,080	5710	190,060	6800
A8	5.37	x 6.	x 4.8	32.2	191,560	5950	223,540	6942
A9	4.9	x 5.7	x 4.5	28.1	168,700	6000	202,820	7218
A10	4.8	x 4.2	x 6.0	20.2	88,680	4400	95,600	4732
	Average of ten					4845		6621
B1	4.0	x 6.0	x 4.5	24.0	109,780	4570	114,100	4754
B2	4.75	x 6.0	x 4.5	28.5	109,200	3820	125,340	4400
B3	4.9	x 6.2	x 5.0	30.4	89,840	2950	102,400	3370
B4	5.0	x 6.0	x 4.5	30.0	105,960	3530	140,800	4693
B5	5.4	x 6.0	x 4.5	32.4	100,100	3080	159,680	4930
B6	4.9	x 6.1	x 7.4	29.9	96,000	3210	104,080	3480
B7	5.0	x 6.26	x 4.5	31.2	126,800	4070	148,200	4742
B8	5.0	x 6.0	x 4.5	30.0	182,380	6040	203,440	6781
	Average of eight					3910		4644

Poor Bed.
A signifies Hassam made blocks.
B " Hand made blocks.

These show that the Hassam concrete was 42 per cent stronger to resist compression, as compared with the ordinary concrete. These tests were made on the Standard Testing Machine in the laboratories of the Worcester Polytechnic Institute.

Q. 6. What would you say as an expert on concrete construction that these tests demonstrate concerning the strength of concrete by the Hassam method as by the ordinary method?

A. These tests demonstrate that the Hassam concrete when used for a road is superior to the ordinary concrete in the figures above given, that is, the Hassam is 33 per cent stronger as against a bending strain and 42 per cent stronger to resist a crushing strain. These are the substantial strains a pavement or a pavement foundation are put to. For consideration, take a road 40 feet wide. The passage of a heavy team or truck over the same subjects the pavement to a bending strain with a load applied where the truck or team bears on the pavement. No one can tell exactly where the bending actually occurs, but it may occur at any and all points of the pavement and a pavement should be strong enough to resist any and all bending strains. A crushing strain is encountered by the direct downward pressure of the wheels on the foundation, which pressure if heavy enough, tends to disintegrate or pulverize the pavement or foundation. A pavement which is constructed better to resist these two strains is a better pavement.

Cross-examination by Counsel for Defendants:

x-Q. 7. Mr. French, you are familiar with the process of grouting with grout consisting of Portland cement, sand and water, are you not?

A. I am.

x-Q. 8. How long have you been familiar with this process?

A. About twenty years.

x-Q. 9. How long have you been familiar with the use of grout by pouring on broken rock, slag, or other material for the purpose of forming a concrete?

A. I should say about ten years.

x-Q. 10. Where the grout is thin and the broken rock would consist of pieces from one and a half to three inches in diameter, will not the grout by gravity permeate the entire mass?

A. That will depend a great deal upon the thickness of the layer of broken stone, a thickness of from four to six or eight inches, if the stone contains a large percentage of quartz I should expect a thorough permeation of the grout. With greater thicknesses, grouting becomes a very unthorough, uncertain method for filling broken stone.

x-Q. 11. You mean greater than eight inches?

A. Yes.

x-Q. 12. From your experience, observation, and reading upon the subject of concrete, would you say that after a roadbed of broken rock had been rolled with say a ten-ton roller, until the voids were reduced to a minimum, that after the application of a grout until the same flushed to the surface, that the rolling after that of the mass would be of any benefit?

A. I should say that it would.

x-Q. 13. Why?

A. The rolling of the broken stone with the ten-ton roller consolidates the stone, decreases the voids, and makes difficult the entrance of the grout. Unrolled stone would present freer passages for the grout.

x-Q. 14. But if the ten-ton roller has so compressed the mass that there can be no further reduction of the voids, what effect upon the rock would the second rolling have?

A. The second rolling, while it would not further reduce the voids, does shake or agitate the broken stone sufficiently to be of material aid in the grout entering the voids of the stone.

x-Q. 15. In your direct testimony, in referring to the making of concrete by the mixing process, after it had been mixed and spread upon the road, you say, "I have never seen a steam roller employed for this purpose, and believe that difficulty would be found in attempting such a step, owing to the slippery, unstable condition of the mass." Would not the same conditions arise to rolling with a heavy roller after the grout has been applied?

A. Not at all. By the mixing process each particle of broken stone is coated with a wet or moist mortar, which serves until set, as a lubricant. Moreover, the percentage of mortar to the broken stone which must be used in the mixing process, is greater than the percentage of mortar or grout which can be put into the rolled stone. The naked stone which has been rolled with a heavy roller has been adjusted mechanically to

a closer fit than is possible for the stones in the mixing process to ever possess.

Cross-examination closed.

ARTHUR W. FRENCH.

WALTER E. HASSAM, being called as a witness on behalf of complainants, testifies as follows:—

DIRECT-EXAMINATION BY COUNSEL FOR COMPLAINANTS:

Q. 1. You are the Walter E. Hassam who has already testified for the complainants in this case?

A. Yes.

Q. 2. Assuming that in the method of making the so-called Hassam pavement, that a ten-ton roller was used in the initial step of crushing or solidifying the naked, uncoated, broken stone, and that thereafter, and after the step of grouting a five-ton roller was rolled over the grouted, crushed, broken stone, while the grout was still fluid, what effect would the five-ton roller have?

A. The five-ton roller would agitate the mass, permeate the grout into the stones and make a solid monolithic. I have noticed that after rolling the dry crushed stone with an eight-ton roller before the grouting and then using an eight-ton roller after the grouting, that the front roll on the eight-ton roller would agitate the mass to a considerable extent. This front roller of an eight-ton roller has less pressure to the square inch than the rear roller of a five-ton roller. This is due to the fact that in the case of an eight-ton roller and

a five-ton roller that three-fifths of the total weight is on the rear roll, and the width of a five-ton roller is 42 inches, an eight-ton roller is 53 inches wide. Therefore with an eight-ton roller the compression of the front roll is 136 lbs. to the sq. inch, and with a five-ton roller the compression is 157 lbs. to the sq. inch with its rear roll. It has been my experience after a great deal of study and practical experience that a Hassam pavement of dry stone, after being grouted, agitates very easily, even with heavy tampers after it had been rolled.

CROSS-EXAMINATION BY COUNSEL FOR DEFENDANTS:

x-Q. 3. Mr. Hassam, in your practical construction of what is known as Hassam pavement, what thickness of pea stone do you use as a top dressing?

A. No specified thickness. We use enough to take up the surplus grout that is forced out of the voids after rolling, or in other words after the voids are all full.

x-Q. 4. Approximately what thickness would that be?

A. From a half-inch down to almost nothing, a very thin coat.

x-Q. 5. After the street has been used for traffic, where the traffic is considerable, this coating of pea stone is soon removed, is it not?

A. From my observation we have pavements which have been laid four or five years and the pea stone is still intact, it being cemented into the grout.

x-Q. 6. Does that occur where traffic is heavy and where streets are often cleaned with street cleaners?

A. It would stay for a number of years, but would gradually wear out as all pavements do.

x-Q. 7. Is not the office of the pea stone merely to level up the street by filling small depressions left after the rolling of the grouted mass?

A. It is used for that purpose and also to fill up the voids between the stones. The object of the pea stone being to fill the angles of the other stone, making a homogeneous mass, and also to get as much stone into the pavement as possible.

x-Q. 8. Is the pea stone considered as a wearing surface?

A. It will do its part.

x-Q. 9. In the finishing of a Hassam pavement, is there any brooming required?

A. We have been in the habit of using a broom in order to get a more even surface.

Cross-examination closed.

WALTER E. HASSAM.

ALFRED THOMAS, being called as a witness on behalf of complainants, and being first duly sworn, testifies as follows:

DIRECT-EXAMINATION BY COUNSEL FOR COMPLAINANTS:

Q. 1. What is your name, age, residence, and occupation?

A. Alfred Thomas, age 56, Worcester, Mass.,

Treasurer of the Hassam Paving Co., and also connected with other corporations in business.

Q. 2. I presume you refer to the Hassam Paving Co. of Massachusetts?

A. Treasurer of the Hassam Paving Co. of Massachusetts.

Q. 3. How long have you been treasurer of the Hassam Paving Co.

A. This is the fifth year.

Q. 4. You are also director of it?

A. Yes.

Q. 5. And you are familiar with the details of its business?

A. I am.

Q. 6. Will you please state in a general way how the business of constructing and laying Hassam pavement is progressing, particularly this year?

Objected to as immaterial and not proper rebuttal testimony.

A. The business is increasing very rapidly. It is conducted by the Hassam Paving Co. of Massachusetts, and also by subsidiary and licensees companies who are given certain territory. I cannot give in detail the amount of business being conducted by the subsidiary companies or the licensees, as that does not become definite until the latter part of the year. The Hassam Paving Co. of Massachusetts business this year has more than doubled. The Connecticut Hassam Paving Co., of which also I am a director, has quadrupled its business this year. The State of New York has adopted this paving for upwards of 57 miles

of State highways this year, that is, this amount of road is finished or under construction this year.

Q. 7. Has the Hassam Paving been adopted for state highway in any other state?

A. Yes, Maine has adopted it and using it.

Q. 8. As a general proposition, then, the business of the Hassam paving as conducted by the Hassam Company of Massachussets is a growing and increasing business, is this correct?

(Same objection.)

A. It certainly is.

Q. 9. What is the capital of the Hassam Paving Company of Massachusetts?

(Same objection.)

A. $500,000.

Q. 10. And, speaking generally, how much of an investment would you say had been made in the Hassam Paving Company of Massachussets, and its subsidiary companies to carry on the business of laying the Hassam pavement?

(Same objection.)

A. Upwards of a million dollars.

No cross-examination.

ALFRED THOMAS.

DISTRICT COURT OF THE UNITED STATES,

District of Oregon.

In Equity.

Hassam Paving Company, a corporation, and Oregon Hassam Paving Company, a corporation,

Complainants,

vs.

Consolidated Contract Company, a corporation, and Pacific Coast Casualty Company, a corporation,

Defendants.

NOTARY'S CERTIFICATE.

I, C. Forrest Wesson, a notary public, in and for the Commonwealth of Massachusetts, do hereby certify that the foregoing depositions of Arthur S. Browne, Arthur W. French, Walter E. Hassam and Alfred Thomas, all residing more than one hundred miles from the place of trial, were taken before me as notary public, at the time and place stated in the record; that counsel for both parties were present during the entire taking of the depositions; that the witnesses were first duly sworn by me to tell the whole

truth before testifying, with the exception of Arthur S. Browne and Walter E. Hassam, who had been previously sworn in the case; that the testimony was taken on the typewriter by consent of counsel and read to the witnesses; that the witnesses duly signed their depositions; and that I am not connected by blood or marriage to any party in this suit, nor interested directly or indirectly in the event thereof, nor am I attorney or of counsel for either party.

[Signed] C. Forrest Wesson.

Worcester, Mass., Sept. 22, 1913.

UNITED STATES PATENT OFF

WALTER E. HASSAM, OF WORCESTER, MASSACHUSETTS, A
ONE-HALF TO CHARLES K. PEVEY, OF WORCESTER, MASSAC

PAVEMENT AND PROCESS OF LAYING THE SAM

No. 819,652. Specification of Letters Patent. Patente

Application filed June 7, 1905. Serial No. 264,188.

To all whom it may concern:

Be it known that I, WALTER E. HASSAM, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Pavements and Processes of Laying the Same; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the making of stone or gravel roads or pavements, and it consists of an improvement in the method of making such roads or pavements, as hereinafter described, and particularly pointed out in the claims.

The object of my invention is to construct a cheaper, more durable, and for many purposes a more efficient road than has hitherto been constructed of broken stone or mixed stone and bituminous or other cement.

I have found that roads made of bituminous compounds after a certain period disintegrate and are expensive to repair. Roads constructed of concrete or stone and cement mixed before they are laid also crumble and break up in time because the presence of the partly-hardened cement between the stone when the mixture is laid prevents the stone from being brought close together by compression, but causes comparatively large cement-filled voids to be left between said stone, and said cement soon disintegrates because it was necessarily disturbed in setting by the mixing operation. It is a well-known fact that if cement is left undisturbed until it has entirely set it will be very strong and durable; but if it is mixed or otherwise disturbed during the time it is setting it will not last. It is therefore essential that the cement used in the construction of roads and pavements be handled and mixed as little as possible and that it be used or laid as soon as possible after it has been mixed. Owing to the employment of unskilled and careless

less durable than it would b
under the best circumstances

No bituminous material
method of construction of
broken stone or gravel, san
The street is first dug out to t
for the subgrade, which is r
Broken stone or gravel is t
proper depth and rolled wit
or compressed by any suita
the voids between the stone
the surface even. It will b
there is no coating of cement
other material on the pieces o
be compressed very close tog
and the voids left between t
tremely small. When the
has been compressed to the d
and firmness, it is grouted w
cement, sand, and water, wh
prepared until immediately
used and which does not re
handling, like the mixture f
therefore does not suffer fro
by careless workmen. All
filled with the cement in the
tion. The cement is then a
until perfectly hard, and a so
obtained for brick, stone or
any other form of paving w
a heavier load than if mixed
Grouting is not only a gre
over the old method of mix
hand, but it reduces the cost
Instead of brick, stone-bloc
other surfaces stated abov
pour a thicker grout of cem
water over the foundation
depth, spread fine-broken
upon it, and roll or compr
stone or gravel into the grout
or before it is set, making a s
surface. It has been found
that this method produces a
rable, up-to-date road, with
from top to bottom, and tha
pair. It will be understood

tom layer of hard-rolled uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, and a suitable surface placed on said grout.

2. A road or pavement consisting of a bottom layer of hard-rolled uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, a second layer of grouting placed on the first layer and a top layer of smaller uncoated stone compressed into the surface of said second layer of grouting before it is set.

3. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone until the voids are small, then grouting with a mixture of cement, sand and water until all the voids in the stone layer are filled, adding a thicker grout of cement, sand, and water, spreading fine stone upon said grout and compressing it into the surface of said grout before it is set.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER E. HASSAM.

Witnesses:

CHAS. K. PEVEY,

A. E. HAMM.

UNITED STATES PATENT OFFICE.

WALTER E. HASSAM, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE HASSAM PAVING COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PROCESS FOR LAYING PAVEMENT.

No. 851,625. Specification of Letters Patent. Patented April 23, 1907.

Application filed November 14, 1906. Serial No. 343,459.

To all whom it may concern:

Be it known that I, WALTER E. HASSAM, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Processes for Laying Pavement; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a process of constructing stone or gravel roads or pavements and it is designed particularly as an improvement on my previous invention patented May 1, 1906, No. 819,652. The process of laying the pavement as described in said patent consists in first laying a layer of uncoated stone, compressing said stone until the voids therein are small, then grouting with a mixture of cement, sand and water until said voids are filled and lastly adding a suitable surface to the foundation thus made. In laying the pavement according to this process, great difficulty has been experienced in distributing the grout in such manner that it will run into and fill all the voids of spaces in the stone layer. This is due to the air which is compressed or imprisoned in said voids and the dust which accumulates on the stone. It has also been found that the imprisoned air has a tendency to force its way through the grouting with the result that the surface thereof is covered with small air holes.

The object of the present invention is to lay the pavement and particularly the grout in such a manner that all the voids in the stone layer will be filled therewith and no holes will be left in the surface.

The invention consists primarily in agitating the grout as and after it is placed upon the stone whereby any air holes that may appear are closed up, the air is forced out of the voids and said voids are filled with the grout. A solid and homogeneous mass is thereby obtained which will last indefinitely. To properly agitate the grout, I preferably employ a steam roller which may be the same used for compressing the stone. Whereas in the old manner of laying the pavement the rolling was stopped after the stone had been compressed, in the present process the rolling is continued during and after the grouting is added. It has been found that said rolling may be continued until the grout has percolated the stone layer before said grout sets.

The present process consists in constructing a foundation by laying a layer of uncoated stone, compressing said stone layer until the voids therein are small, grouting the same with a mixture of cement, sand and water, agitating the mass by rolling or otherwise compressing it until the stone layer is compact and the grout flushes up to the surface showing that all the voids or spaces between the stone have been filled with the grout. Similarly constructed layers of stone and grout may be added to the first one until the desired thickness is reached. Any suitable surface may be placed on the foundation thus formed but I prefer to use another layer of grout, preferably thicker, with fine stone in its surface. The fine stone may be mixed with said layer of grout or the latter may be laid first and the fine stone spread upon and pressed into its surface before it has become set. The surface may be smoothed, preferably by brooming, to the desired contour before the grout sets.

I claim:

1. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids therein are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between the stone with said grout and repeating said process of laying layers of stone and grout and agitating the same until the desired thickness is reached.

2. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between the stone with said grout, and placing a surface on the mass thus formed.

3. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between the stone with said grout, adding an-

other layer of grout and fine stone and smoothing the surface to the desired contour before it is set.

4. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between said stone with the grout, adding another layer of grout, spreading fine stone upon said grout and smoothing to the desired contour before it has set.

5. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids therein are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between said stone with the grout, repeating said process of laying layers of stone and grout and agitating the same until the desired thickness is reached, adding another layer of grout, spreading fine stone upon said grout and smoothing to the desired contour before it has set.

In testimony whereof, I affix my signature, in presence of two witnesses.

WALTER E. HASSAM.

Witnesses:

CHAS. K. PEVEY,

EDITH M. TOLLEY.

No. 861,650. PATENTED JULY 30, 1907.

W. E. HASSAM.

ARTIFICIAL STRUCTURE AND PROCESS OF MAKING THE SAME.

APPLICATION FILED NOV. 30, 1906.

Fig. 1.

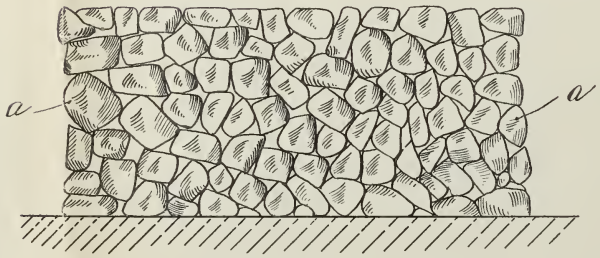
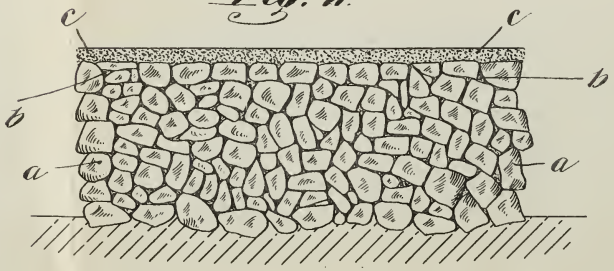


Fig. 2.



Witnesses:
C. F. Wesson
E. M. Allen.

Inventor:
Walter E. Hassam
By Attorneys
Smithgate & Smithgate

UNITED STATES PATENT OFFICE.

WALTER E. HASSAM, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO HASSAM PAVING COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

ARTIFICIAL STRUCTURE AND PROCESS OF MAKING THE SAME.

No. 861,650. Specification of Letters Patent. Patented July 30, 1907.

Application filed November 30, 1906. Serial No. 345,729.

To all whom it may concern:

Be it known that I, WALTER E. HASSAM, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Artificial Structure and Process of Making the Same, of which the following is a specification.

My invention relates to an artificial structure capable of use for foundations, walls, abutments, columns, floors, etc., but especially adapted for pavements for roads, sidewalks, and the like.

In a prior patent granted to me on the first day of May 1906, No. 819,652 I have described a structure in which, broken stone, gravel, or the like has been placed on the bottom of an excavation and rolled to compact the same, and the broken stone or gravel has been treated with a grouting or the like, subsequent to its rolling, and a suitable wearing surface has been placed thereon.

The principal object of this invention is to provide for improving the surface layer, and the improved surface layer can be used either with those constructions and methods which involve the use of previously coated stone, or with that which is carried out with uncoated stone afterwards grouted.

Reference is to be had to the accompanying drawings, in which

Figure 1 is a sectional view of a portion of an excavation with uncoated stone placed therein, ready to be compressed, and Fig. 2 is a similar view of the structure as completed constituting a pavement.

In carrying out the invention, the bottom of the excavation is preferably rolled, and then a layer of broken stone or gravel *a* is placed therein and rolled hard. For example, it may be eight inches deep when originally placed in position, and rolled or compressed until it is six inches deep.

In the preferred embodiment of the invention, the stone is placed in position in an uncoated state and rolled hard or compressed and thereafter grouted with a more or less thin cement grouting *b* to fill all the voids among the stone. The invention also may be carried out in connection with the method which consists in coating the stones before they are placed in the excavation and rolled. In either event, a layer of grouting *c* is placed on the layer of stones. If previously coated stones are used, this surfacing layer *c* has to be applied as a separate step of the process, but if uncoated stones are employed, the grouting is poured down upon them, not only until it fills the voids, but until the layer *c* is produced, so that this is a continuation of the grouting *b* and homogeneous therewith.

In order to produce a suitable surface on top of the pavement or other structure which is being made, uncoated fine or pea stones are rolled into the layer *c* before the cement has a chance to set or harden. The top layer *c* however, may be formed of a mixture of sand, cement, and fine pea stones preferably in substantially equal proportions, and a suitable amount of water and applied to the top of the layer of hard rolled stones.

While I have illustrated and described a preferred embodiment of my invention, I am aware that modifications may be made therein without departing from the spirit of the invention as expressed in the claims.

Having thus described my invention, what I claim is:—

1. An artificial structure comprising a foundation layer of hard rolled stone having grouting filling the voids therein and a surface layer comprising a continuation of said grouting containing fine stones compressed into its surface.

2. A road or pavement consisting of a bottom layer of hard rolled uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, and a top layer of smaller uncoated stones compressed into the surface of said grouting before it sets.

3. A road or pavement consisting of a bottom layer of stone, a grouting placed upon said stone and filling all the voids therein, and a top layer of smaller uncoated stone compressed into the surface of said grouting before it sets.

4. The method of making a pavement which consists in rolling uncoated stone, placing a thin grouting thereupon, allowing the grouting to run down and fill the voids in the layer of stones, and compressing fine uncoated stones into said grouting before it sets.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

WALTER E. HASSAM.

Witnesses:
LOUIS W. SOUTHGATE,
MARY E. REGAN.

2—396.

UNITED STATES OF AMERICA,

Cut.

DEPARTMENT OF THE INTERIOR,

PATENT OFFICE.

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME, GREETING:

THIS IS TO CERTIFY *That the annexed* are true copies of all Instruments of writing found of record from January 28, 1903, up to and including May 15, 1912, which may affect the title of the

Letters Patent of

Walter E. Hassam, Assignor of One-half to Charles K. Pevey,

Number 819,652, Granted May 1, 1906,

for

Improvement in Pavements and Processes of Laying the Same;

and

Letters Patent of

Walter E. Hassam, Assignor to Hassam Paving Company,

Number 861,650, Granted July 30, 1907,

for

Improvement in Artificial Structures and Processes of Making the Same,

and

Letters Patent of

Walter E. Hassam, Assignor to The Hassam Paving Company,

Number 851,625, Granted April 23, 1907,

for

Improvement in Processes of Laying Pavement.

Recorded in Liber and page as designated on the margin of each *Instrument.*

Said record has been carefully compared with the original and is a correct transcript of the whole thereof.

In testimony whereof *I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington this 23rd day of May, in the year of our Lord one thousand nine hundred and twelve and of the Independence of the United States of America the one hundred and thirty-sixth.*

[seal] F. A. Tennant,

Acting Commissioner of Patents.

Liber V-71,
Page 457.

Assignment of Invention After Application and Before Patent.

Whereas, I Walter E. Hassam of Worcester in the County of Worcester and State of Massachusetts, have invented certain new and useful improvements in Pavement and Process of Laying the Same for which, on the seventh day of June 1905, made application, (Serial No. 264,188), for Letters Patent of the United States, whereof I am now the sole owner of the territory hereinafter assigned;

And whereas, Charles K. Pevey, of the same place is desirous of acquiring an interest therein, and in the Letters Patent to be obtained therefor:

Now, therefore, to all whom it may concern, be it known, that for and in consideration of one dollar and other valuable consideration to me in hand paid, the receipt whereof is hereby acknowledged, I have assigned, sold, and set over, and do hereby assign, sell, and set over, unto the said Charles K. Pevey an undivided one-half interest in the full and exclusive right, title, and interest in and to the said invention, as fully set forth and described in the specification prepared and executed by me preparatory to obtaining Letters Patent therefor, and I do hereby authorize and request the Commissioner of Patents to issue the said Letters Patent to the said Charles K. Pevey and myself as the assignees of my right, title, and interest in and to the same, for our sole use and behoof, and for the use and behoof of our legal representatives.

In Testimony Whereof, I hereunto set my hand and affix my seal this 12 day of June, A. D. 1905.

Walter E. Hassam (L. S.)

Two Witnesses: { Alex J Hamm
Chas K. Pevey

Recorded June 14, 1905.

Liber P-75,
Page 80.

ASSIGNMENT.

WHEREAS I, WALTER E. HASSAM, of Worcester, County of Worcester State of Massachusetts, have invented two new and useful ARTIFICIAL STRUCTURES & PROCESS OF MAKING THE SAME, for which I am about to make two applications for letters-patent of the United States, and

WHEREAS THE HASSAM PAVING COMPANY, of said Worcester, a corporation duly created and existing under the laws of the State of Massachusetts, is desirous of acquiring the entire right, title, and interest in said two inventions, and in all letters-patent, reissues, or extensions to be obtained therefor in this or any foreign country:

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that for and in consideration of the sum of one dollar to me in hand paid, and other good and valuable considerations unto me moving, the receipt of which is hereby acknowledged, I, the said Walter E. Hassam, have sold, assigned, and transferred, and by these presents do sell, assign, and transfer unto the said Hassam Paving Co. the full and exclusive right to the said inventions as fully set forth and described in the specifications of the two applications prepared and executed by me on even date herewith preparatory to obtaining letters-patent of the United States therefor, together with the same interest in all patents, reissues

or extensions that may be obtained thereon in this or any foreign country:

And I do hereby authorize and request the Commissioner of Patents to issue all letters-patent, reissues or extensions based on said inventions to the said Hassam Paving Co. as the assignee of my entire right, title, and interest in and to the same, for the sole use and behoof of the said Hassam Paving Co. and its legal representatives or assigns.

In testimony whereof I have hereunto set my hand and affixed my seal this 28th day of November, 1906.

Walter E Hassam [seal]

Acknowledgment

City & County of Worcester, } ss
State of Massachusetts }

Then on the day and year above written personally appeared before me the said Walter E Hassam who acknowledged the foregoing assignment to be his free act and deed to the end that the same might be recorded and proved as such.

Louis W Southgate
Notary Public

Louis W Southgate
Notary Public
Worcester Co
Worcester Mass. [seal]

Recorded November 30th 1906

Liber R-75,
Page 123.

Assignment of Invention after Application and Before Patent

WHEREAS, I, Walter E. Hassam of Worcester in the County of Worcester and State of Massachusetts have invented certain new and useful improvements in Process for Laying Pavement for which, on the 14th day of November 1906, I made application (Serial No. 343,459,) for Letters Patent of the United States, whereof I am now the sole owner of the interest hereinafter assigned;

AND WHEREAS, The Hassam Paving Company a corporation organized and existing under the laws of the State of Massachusetts and having its principal place of business at Worcester Massachusetts, is desirous of acquiring an interest therein, and in the Letters Patent to be obtained therefor:

NOW THEREFORE, to all whom it may concern, be it known, that for and in consideration of one dollar dollars ($1—) to me in hand paid, the receipt whereof is hereby acknowledged, I have assigned, sold, and set over, and do hereby assign, sell, and set over, unto the said The Hassam Paving Company the full and exclusive right, title, and interest in and to the said invention, as fully set forth and described in the specification prepared and executed by me preparatory to obtaining Letters Patent therefor, and I do hereby authorize and request the Commissioner of Patents to

issue the said Letters Patent to the said The Hassam Paving Company as the assignee of my right, title, and interest in and to the same, for its sole use and behoof, and for the use and behoof of its successors and assigns.

In Testimony Whereof, I hereunto set my hand and affix my seal this 15th day of November A. D. 1906

WALTER EDWIN HASSAM [L. S.]

Two Witnesses:

CHAS K PEVEY

EDITH M. TOLLEY

Recorded Dec. 28, 1906

Liber E-76,
Page 251.

ASSIGNMENT.

WHEREAS I, WALTER E. HASSAM, of Worcester, County of Worcester, State of Massachusetts, did invent a new and useful PAVEMENT AND PROCESS OF LAYING THE SAME for which I duly applied for letters-patent of the United States; and whereas I assigned one-half interest in said invention to CHARLES K. PEVEY of said Worcester; and whereas Letters-Patent were granted on said invention May 1, 1906, No. 819,652, which patent issued as assigned one-half to said Charles K. Pevey; and whereas we are now the sole owners of said patent and of all rights under the same; and

WHEREAS HASSAM PAVING COMPANY of said Worcester, a corporation duly created and existing under the laws of the State of Massachusetts, is desirous

of acquiring the entire interest in said invention, and in all letters patent, reissues or extensions now or hereafter to be obtained on said invention in this or any foreign country:

Now, therefore, to all whom it may concern: Be it known that for and in consideration of the sum of One Dollar to us in hand paid, and other good and valuable considerations unto us moving, the receipt of which is hereby acknowledged, we, the said Walter E. Hassam and Charles K. Pevey have sold, assigned and transferred, and by these presents do sell, assign and transfer unto the said Hassam Paving Company the whole right, title and interest in and to the said invention, and in and to the said letters-patent granted thereon, and in and to all further letters-patent, reissues or extensions that may be obtained thereon in this or any foreign country, the same to be held and enjoyed by the said Hassam Paving Company for its own use and behoof, and for the use and behoof of its legal representatives, to the full end of the term for which said letters-patent, reissues or extensions are or may be granted, as fully and entirely as the same would have been held and enjoyed by us had this assignment and sale not been made.

And for the foregoing considerations we hereby agree to execute all applications for further patents, reissues or extensions, assignments, or powers-of-attorney that may be necessary to protect said invention by further patents, reissues or extensions in this or any foreign country, and to vest the title thereto in the said Hassam Paving Company.

And for the foregoing considerations we have sold, assigned and transferred, and do hereby sell, assign and transfer all rights to back damages or profits that may exist against any person, firm or corporation who has infringed upon said patent while we have held title thereto, and hereby authorize and empower the said Hassam Paving Company to sue for and collect the same in its own name, and to its own use, and for the use and behoof of its legal representatives or assigns.

In testimony whereof we have hereunto set our hands and affixed our seals at said Worcester, this fourteenth day of March, 1907.

Walter E Hassam [seal]
Charles K. Pevey [seal]

Acknowledgment.

City & County of Worcester, } s.s.
State of Massachusetts. }

Then on the day and year above written, personally appeared before me the said Walter E. Hassam and Charles K. Pevey who acknowledged the foregoing assignment to be their joint free act and deed to the end that the same may be recorded and proved as such.

George T. Dewey
Notary Public.

George T. Dewey
Notary Public
Worcester Co.
Mass.
[seal]

Recorded March 22, 1907.

Liber V-77,
Page 399.

KNOW ALL MEN: That The Hassam Paving Company, a corporation duly organized under the laws of the State of Massachusetts and located and doing business in Worcester in said State, for the consideration of one dollar and other valuable considerations, the receipt whereof in full is hereby acknowledged, does hereby sell and grant to The Connecticut Hassam Paving Company, a corporation duly organized under the laws of the State of Connecticut and located and doing business in New Haven in said State, a license to construct and lay pavements under, and to use United States Letters Patent #819,652, being for an improvement in pavement and the process of laying the same, in all that portion of New York State south of the following counties: Rensselear, Fulton, Onondaga, Genesee, Orleans, Albany, Herkimer, Cayuga, Erie, Oswego, Schenectady, Oneida, Wayne, Chatauqua, Cortland, Montgomery, Madison, Monroe, Niagara and Jefferson, during the life of said patent.

The Hassam Paving Company, its successors and assigns, covenants to and with said The Connecticut Hassam Paving Company, its successors and assigns, that it has full right and title to make this license in manner and form as herein expressed, and that there is no prior assignment, grant, mortgage, license, or other conveyance or incumbrance under or relating to said patent that can prevent said The Connecticut Hassam Paving Company from enjoying the privileges con-

veyed by this license to the full extent herein given and stated.

In witness whereof, The Hassam Paving Company has hereunto set its hand and seal in duplicate, as of and for the 15th day of May, 1907, acting by Walter E. Hassam, its General Manager and Agent hereunto duly authorized, this instrument having first been approved by M. J. Whittall, the President of the Company, as required by its by-laws.

The Hassam Paving Company,
By Walter E. Hassam
Its General Manager and Agent
hereunto duly authorized.

Witnesses:
Alfred Thomas
M. Y. Anderson
Approved:
M. J. Whittall
President, The Hassam Paving Company.

[Hassam Paving Company Seal Worcester Mass.] [seal]

Recorded January 9, 1908.

Liber V-77,
Page 400.

KNOW ALL MEN: That The Hassam Paving Company, a corporation duly organized under the laws of the State of Massachusetts and located and doing business in Worcester in said State, for the consideration of one dollar and other valuable considerations, the receipt whereof in full is hereby acknowledged, does hereby sell and grant to The Connecticut Hassam Paving Company, a corporation duly organized under the laws of the State of Connecticut and located and doing business in New Haven in said State, the exclusive license, within the State of Connecticut, to construct and lay pavements under, and to use United States Letters Patent #819,652, being for an improvement in pavement and the process of laying the same, during the life of said patent.

The Hassam Paving Company, its successors and assigns, covenants to and with said The Connecticut Hassam Paving Company, its successors and assigns, that it has full right and title to make this license in manner and form as herein expressed, and that there is no prior assignment, grant, mortgage license, or other conveyance or incumbrance under or relating to said patent that can prevent said The Connecticut Hassam Paving Company from enjoying the privileges conveyed by this license to the full extent herein given and stated.

IN WITNESS WHEREOF, The Hassam Paving Company has hereunto set its hand and seal in duplicate,

as of and for the 15th day of May, 1907, acting by Walter E. Hassam, its General Manager and Agent hereunto duly authorized, this instrument having first been approved by M. J. Whittall, the President of the Company, as required by its by-laws.

THE HASSAM PAVING COMPANY,
By WALTER E. HASSAM
Its General Manager and Agent.
hereunto duly authorized.

Witnesses:
ALFRED THOMAS
M. Y. ANDERSON
Approved:
M. J. WHITTALL
President, The Hassam Paving Company.

[Hassam Paving Company Seal Worcester Mass.] [SEAL]

Recorded January 9, 1908

AGREEMENT made this 16th day of July, A. D. 1909, by and between the HASSAM PAVING COMPANY, a corporation duly established by law and having its usual place of business in the City and County of Worcester and Commonwealth of Massachusetts, party of the first part, and the OREGON HASSAM PAVING COMPANY, a corporation duly established by law and having its usual place of business in the City of Portland and State of Oregon, party of the second part;

WITNESSETH:

THAT WHEREAS, letters patent of the United States, bearing the following numbers:

819,652;	851,625;	861,650;
861,651;	890,902;	912,125;

for an improvement in pavement and foundations and process of laying the same, are now owned by the party of the first part; and

WHEREAS the party of the second part desires to use and make said improvement in pavement and foundations and process of laying the same according to said letters patent;

NOW, THEREFORE in consideration of one dollar and other valuable consideration each to the other party paid, the receipt whereof is hereby acknowledged, it is mutually agreed as follows:

1. The party of the first part hereby gives to the party of the second part the exclusive right to use and make said improvement in pavement and foundations

and process of laying the same according to said letters patent, for and during the term beginning the 16th day of July, A. D. 1909, and ending with the expiration of the term of said letters patent, in the State of Oregon, and a strip in the southern part of the State of Washington, extending from the westerly line of said State eastward to the Columbia River, and being twenty-five miles in width, measured from the southern boundary of the State of Washington, north, and not elsewhere or in any other place.

2. The party of the second part agrees to pay to the party of the first part therefor, as a license fee or royalty the sum of fifteen (15) cents for each and every square yard of the improved pavement (known as "Hassam Pavement") described in said letters patent, and used or made by said party of the second part in said territory during the term of this agreement; and nine (9) cents for each and every square yard of foundation (known as "Hassam Foundation") described in said letters patent, when used or made by said party of the second part under any other kind of pavement except Hassam Pavement for streets and sidewalks; provided, however, that if any foundation less than five inches (5") in thickness be made, said royalty per square yard shall be ratably reduced so that such royalties shall bear the same proportion to nine (9) cents that the thickness of said foundation bears to five inches.

3. The license fees and royalties shall be due and payable on or before the 20th day of each month for all

pavement or foundations made or used during the preceding month.

4. The party of the second part shall at all times keep accurate accounts and make full returns in writing to the party of the first part on the 20th day of each month of the number of square yards used or made by it during the previous month. Such returns, if the party of the first part shall so require, shall be verified by oath of the party of the second part or someone in its behalf; and the party of the first part shall have the right, either by its officers or its attorney, to examine any and all of the books of account of said party of the second part containing any items, charges, memoranda or information relating to the use or making of said improvement or process; and upon request made by the party of the second part shall produce all such books and papers for said examination.

5. The party of the second part agrees not to contest the validity of said letters patent and the rights of the party of the first part thereunder at any time during the continuance of this agreement.

6. The party of the second part further agrees to assign to the party of the first part any patents or claims to patents, relative to an improvement for a street pavement constructed of stone, sand and hydraulic or Portland cement or process therefor, in which it may be directly or indirectly interested, or to which it may become entitled during the continuance of this license, and for a term of three years after the termination hereof, or after the extension or renewal of the same.

7. The party of the second part agrees to make no contract for the use or making of said pavement or foundation according to said letters patent, unless such contract provides for the execution of the work in accordance with the approved specifications, a copy of which is hereto annexed.

No variation of said approved specifications shall be made, unless the consent in writing of the party of the first part is first obtained, or unless the party of the first part shall make any variation therein and give notice thereof in writing to the party of the second part by mailing such notice to the last known business address of the party of the second part.

The party of the second part agrees to conform in all respects to said approved specifications or to variations therein approved or made by the party of the first part, and to perform truly and faithfully all work called for thereby; and agrees that in the event that it does not conform to said specifications or to the variations therein in the performance of the work called for therein, in accordance therewith, of which the party of the first part shall be the sole judge, the party of the first part may take possession of the work and complete the same, according to said specifications or variations, at the expense of the party of the second part which expense and any damage caused by said failure or default, the party of the second part agrees to pay.

8. The rights herein granted are on the express condition that the party of the second part shall, within each period of twelve months following the date of this agreement during the term thereof, use said patent by

the actual construction of work to an extent to cause it to pay the said party of the first part within each of said periods, royalties or license fees amounting to not less than the sum of five thousand dollars ($5,000.), and in the event of said party of the second part failing to pay the party of the first part the license fees or royalties above set forth, then the rights herein granted, at the option of the party of the first part, may be revoked by notice in writing from the party of the first part, in the manner hereinafter specified.

The party of the first part reserves the right to waive any one or more breaches in the above agreement on the part of the party of the second part, and such waiver of any one or more shall not operate as a waiver of them all; it being the intent of the parties that if, in the judgment of the party of the first part, the party of the second part is laying and constructing as much pavement as is practicable or possible under all the circumstances of the case in said territory, then that said party of the first part may not, if it so elects, take advantage of any technical breach or otherwise.

9. It is further agreed, that if the royalties or license fees, or any part thereof, shall at any time be in arrears for thirty days after the same shall have become due, or if the party of the second part shall have become bankrupt or insolvent, or enter into any composition with its creditors, or shall make any default in performing any of the agreements herein contained, which agreements are to be construed as conditions of the license hereby granted, the party of the first part, may terminate its license, by notice in writing given to the

party of the second part by mailing such notice to its last known business address, which license shall thereupon become void, without prejudice to any right of action or remedy of the party of the first part for the recovery of any moneys then due to it hereunder, or in respect of any antecedent breach of any agreement herein contained; and provided further, that if the party of the second part shall discontinue the use of this license, and shall not in the said territory use or make said pavement or process of laying the same for a space of six months in any year, the party of the first part shall be at liberty, by notice in writing, given as aforesaid, to terminate this license without prejudice to any right of action or remedy for the recovery of any moneys then due to it hereunder.

10. The party of the second part further agrees to use its utmost reasonable endeavors to create and maintain as large a business as possible in the making of said improved pavements and processes in all the above specified territory.

If the said party of the first part is not satisfied with the endeavors of the party of the second part to create and maintain a business of satisfactory size, it reserves the right to enter said territory and to make contracts for paving at a price not less than one dollar and ninety cents ($1.90) per square yard for finished pavement. Said contracts are to be taken in the name of the party of the second part who agrees that it will execute the same and in default of said execution the party of the first part may enter and execute the contract or contracts and revoke the license.

And if the party of the second part shall not at any time during the continuance of this agreement make all reasonable endeavors (and of the reasonableness of the endeavors, the party of the first part is the sole judge) to secure contracts in all portions of the aforesaid territory, the party of the first part shall be at liberty at any time, on notice as above specified, to revoke this license as to such part of said territory as it shall deem not to have been favorably worked or exploited.

If, in the opinion of the party of the first part, the party of the second part by reason of its interest in other pavements, or by reason of its becoming licensed as to other pavements, shall not be doing for said Hassam Pavement all that it should, then said party of the first part may revoke this license at any time by notice in writing as above specified, but any such revocation contemplated in this clause shall not operate to take away from said party of the second part the right to finish existing contracts or to take and execute contracts made on bids filed with any municipality as of the time when said license is revoked.

11. The party of the second part shall not assign any rights hereunder without the consent and approval in writing of the party of the first part being first obtained.

12. This agreement is executed and delivered in the Commonwealth of Massachusetts and shall be construed and interpreted in accordance with the laws thereof.

In witness whereof the parties hereto set their hands and cause their seals to be affixed by their proper officers thereunto duly authorized, the day and year first above written.

Hassam Paving Company
By Walter E. Hassam Gen. Mgr.
Oregon Hassam Paving Company
By J. A. Miller, Pres.
[seal.]

Approved
Alfred Thomas
[seal.] Treas.

APPROVED SPECIFICATIONS FOR LAYING A HASSAM CEMENT-CONCRETE PAVING.

TIME COMMENCED: Work upon said pavement shall be commenced by the contractor within days after the date of this contract and shall be pushed with diligence until completed.

STREET OPENED: Only so much of the street shall be opened and obstructed from travel at any one time, by the contractor as shall meet with the approval of the

EXCAVATION: The roadway shall be excavated by the contractor to a depth of from the finished grade of the street.

If the sub-soil is of a clay or loamy nature, it shall be excavated to an extra depth of and shall be refilled with gravel or cinders and then rolled or compressed to the proper sub-grade.

THICKNESS: The thickness of said pavement shall be at least six (6″) inches from the sub-grade to the finished grade of the street.

PAVING: Upon the sub-grade, after being thoroughly rolled or compressed to a true and even surface at least six (6″) inches below the finished grade, shall be spread a layer of stone varying in size from 2½″ to 1½″ to conform with the grades and contour of the street after rolling. After this stone has been thoroughly compacted by rolling or compression and firmly imbedded and the voids reduced to a minimum, it shall be grouted with a grout

consisting of one part Portland cement to one part sand. This grout shall be poured upon the stone until all the voids are filled and the grout flushes to the surface. The rolling or compression to continue during the process of grouting. Upon this surface shall be placed a very thin layer of pea stone which shall be spread and rolled or compressed even and smooth over the entire surface, rolling to continue until grout flushes to surface.

EXPANSION JOINTS: Suitable expansion joints shall be provided at the curb and across the street, as the contractor may direct.

CEMENT: All cement shall be of first quality Portland cement.

SAND: The sand shall be fine, clean and sharp and free from clay or loam.

WATER: All water necessary for the construction of the pavement shall be furnished free of cost to the contractor by the

STONE: The broken stone may be of any proper or suitable grain or quality.

STREET CLOSED: All paving shall be kept without travel for a period of at least six (6) days after the completion if necessary in the judgment of the contractor, before being opened to the public for use.

MARKING OF PAVING: Every street laid shall be marked with a suitable mark, with the inscription, "Patented May 1, 1906; April 23, 1907; July 30, 1907; June 16, 1908."

HASSAM

PAVEMENT.

proved foundations and process according to the approved specifications for laying HASSAM CEMENT— Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of

for the term of one year

from the date hereof.

HASSAM PAVEMENT

ITS CONSTRUCTION AND ADVANTAGES

ORIGIN The Hassam Pavement was invented by Mr. Walter E. Hassam, a man of sound road-building sense, developed by long, practical experience. Mr. Hassam was formerly Street Commissioner of the City of Worcester, Mass., and later President of the Massachusetts State Highway Association. The pavement was patented in 1906, and all patent rights are owned by the Hassam Paving Company, of Worcester, Mass.

SIMPLICITY As is the case with many other great inventions this Hassam Pavement is remarkable because of its simplicity. There is no secret and mystifying process. Every detail of its construction is open and comprehensible, and the closest scrutiny is welcomed.

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

Hassam Pavement in a Beautiful Residence Section of Portland, Oregon

PROCESS OF CONSTRUCTION Its method of construction consists of placing a layer of hard, tough broken rock, free from fine rock, dirt and dust, on a carefully prepared and rolled sub-grade. This layer of rock is made uniform in depth and of sufficient thickness to give a full six inches after being thoroughly compacted by rolling with a steam roller.

The voids in the rock are then completely filled with "grout," which consists of one part Portland cement to two parts sand, mixed with sufficient water to make the grout flow freely into the voids of the rock, or about the consistency of thick cream. This grout is mixed thoroughly and continuously in specially constructed Hassam Grout Mixers, from which it flows by gravity through four-inch metal conductors and is distributed directly onto the street.

E. Fifteenth Street
Portland, Oregon

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

Hassam Pavement on Multnomah Street, Portland, Oregon. Holladay Park at the Right has "Hassam" on Four Sides

It percolates rapidly and freely into the rock and no one who has seen the operation can doubt for a moment that the rock voids are absolutely filled by this grout.

Upon the surface thus prepared, a very thin layer of pea-sized broken rock is uniformly spread. The steam roller is again brought into service immediately after (almost simultaneously with) this grouting process and the grouted pavement is carefully rolled and "ironed" out. This second rolling practically "drives" the grout into the interstices of the rock and has somewhat the same action that "clamping" has when two boards are glued together by a cabinet maker. The surface of the pavement is then broomed, which process removes the surplus water and gives the finishing touches to the appearance of the street.

E. Washington Street
Portland, Oregon

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

Hassam Pavement in the Warehouse District, Stockton, California

DURABILITY The unique methods peculiar to the construction of the Hassam Pavement render it many advantages, not the least among which is great durability. The use of the heavy roller on the rock before it is grouted, as well as afterward on the rock and mortar combined, give the Hassam "Compressed Concrete" a compressive strength many times that of concrete mixed in the old-fashioned manner; while the use of the very rich grout of cement and sand gives an unusually high tensile strength which is still further increased by the interlocking of the broken rock brought about by the thorough rolling. The result of the Hassam method of construction is the strongest and densest form of concrete known today which is applicable to practical uses.

Foot of East Washington Street, Portland, Oregon

of the second part the right to make and use said im-

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

General View of British Columbia Parliament Buildings at Victoria, showing Hassam Pavement in Driveways

SANITARINESS Its very density and imperviousness prevent the absorption of injurious foreign liquids and gases and insure sanitariness and ease of cleaning.

ADAPTABILITY Hassam Pavement has a remarkable range of advantageous uses. It is the most comfortable hard-surface pavement in existence. In the hot summer days it does not radiate an intense heat as do bituminous and asphaltic pavements. And it does not soften under the sun's rays, and become sticky and hard to pull over, but always maintains a surface over which it is easy to travel and to haul a vehicle. In the winter, the rains do not render Hassam Pavement slippery. On the contrary both horses and automobiles can travel over it with absolute safety and maximum efficiency whether wet or dry. It fills the requirements of both heavy and light traffic.

A Beautiful Suburban Drive, Portland, Ore.

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

Hassam Pavement on Portland Heights, a 7½ Per Cent Grade

LABOR AND MATERIAL FOUND IN EVERY LOCALITY Not only is "Hassam" adaptable for use in all climates, but it can be laid, in nearly every instance, with materials which are native to every locality or state, so that money expended on material and labor for Hassam Pavement assists local industries and remains in the community where the pavement is laid. Thus the community has both the pavement and the money. Cement, sand, rock, water and proper workmanship combined furnish the essential requirements for laying this pavement.

REPAIRING No unwieldly and special apparatus is required to make the repairs which may be necessitated by the tearing up of the Hassam Pavement by water, gas, telephone or other companies. Repairs can

Wasco Street
Portland, Oregon

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

Hassam Pavement, Vista Avenue, Portland, Oregon. The portion of the street occupied by the streetcar tracks is also paved with "Hassam"

be made with but little equipment and expense, and with reasonable care one can procure a patch which is almost impossible to detect. This item of ease of repairing is vital to the smaller towns and cities where the cost of sending to a larger city for a contractor to make repairs (as is necessary with bituminous pavements requiring special and expensive plants) is great.

HUMANE Because of its sure footing and ease of traction Hassam Pavement is being endorsed extensively by Humane Societies and horse-owners. President Nelson, of the Spokane Horse-owners' Association, after a thorough investigation of Hassam in Portland, Ore., stated, "We found that it wears with a rough surface and that the pavement four years old gives even a better footing for horses than the new pavement."

Hassam Pavement Surrounds Beautiful Homes. (Portland, Oregon)

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

View of Cut Made in Hassam Pavement at Coeur d'Alene, Idaho

"It satisfies the most skeptical"

AS OTHERS SEE US

Portland, Ore., September 21, 1910.

"..... .....City of Portland has something more than ten miles of Hassam Pavement at the present time, six of which was laid this year. In addition there is about nineteen miles under contract, and plans have been ordered for upwards of twenty miles more upon petition of property owners. It has given good satisfaction."

(From a message.) (Signed) J. W. MORRIS,
City Engineer.

THE RATE OF INCREASED USE OF HASSAM PAVEMENT is well illustrated in the case of Portland, Ore., as shown in the following table:

Year	Approximate No. Yards	Miles
1908	8,000	½
1909	63,000	4
1910	217,000	13
1911	500,000	29
Total	788,000	46½

Water Front District
Portland, Oregon

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of

for the term of one year from the date hereof.

Hassam Pavement on Sherman Street, Coeur d'Alene, Idaho

"From all points of view, cost included, a thoroughly satisfactory pavement."—H. B. Wright, City Engineer of Coeur d'Alene.

BOARD OF PUBLIC WORKS
City of Spokane, Wash.

February 20, 1911.

To Whom it May Concern:

The Inland Empire Hassam Pavement Company laid about eleven blocks of their pavement on Indiana Avenue last year. We watched the construction of this very closely and found that it was laid with the utmost care and strictly according to specifications; and from this fact it is sure to be a lasting pavement.

It is sanitary on account of its smooth surface; still, it is not slippery, having just enough grit on the surface to give a good foot-hold for horses traveling over it.

It is standing up under the heaviest kind of traffic and we believe that Hassam is going to be the most popular pavement in Spokane when the Company gets thoroughly established and the people learn the good features of it.

We heartily recommend the Hassam Pavement to any district or city wishing to put in pavement.

(Signed) J. C. ARGALL, Secretary.
GEO. M. MUDGETT, Street Com'r.

On the Water Front, Stockton, California

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

Hassam Pavement, Indiana Avenue, Spokane, Washington

AMERICAN TRUST CO.

Coeur d'Alene, Idaho, February 15, 1911.

Inland Empire Hassam Paving Company,
Spokane, Wash.

Gentlemen:

The Hassam Pavement that was laid in Coeur d'Alene last year is proving a great success. We think the thirty thousand square yards will prove an everlasting roadway for our town, and one for which we have been looking. We feel confident that it is the best and cheapest pavement on the market today.

We have no hesitation in recommending your pavement to any inquiring.

Yours truly,

(Signed) C. H. CHAMBERLAIN, Manager.

E. Thirty-third Street
Portland, Oregon

proved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

Coeur d'Alene's (Idaho) Automobile Fire Truck and Brigade on Hassam Pavement

CITY OF COEUR D'ALENE, IDAHO
Fire Department

February 20, 1911.

To Whom it May Concern:

The Hassam Pavement laid in Coeur d'Alene last year is giving the best of satisfaction to all who have occasion to ride over it.

We have both horses and auto-trucks in our department and I have observed that the horses run on this pavement with the utmost confidence—they do not slip and the pavement does not injure their feet. This pavement is also desirable for automobiles as the surface has just enough grit to keep it from being slippery. The auto-trucks do not skid as they turn the corners, and it does not matter much how fast they are traveling.

I wish to say that I, as well as my firemen, are very much pleased with Hassam Paving and would not hesitate to recommend it to anyone.

(Signed) J. H. O'ROURKE,
Chief of Fire Department.

Grand Avenue
Portland, Oregon

"The most heavily traveled street on the East Side."

Hassam Pavement, Hunter Street, Stockton, California

Coeur d'Alene, Idaho, February 1, 1911.

To Whom it May Concern:

The Inland Empire Hassam Paving Company, under contract with the City of Coeur d'Alene, Idaho, constructed about thirty thousand square yards of Hassam Concrete Pavement, fully complying with specifications and performing the work in a most thorough and conscientious manner.

I have never known street contractors who were more courteous or desirous of doing first-class work.

The very nature of the construction of Hassam Concrete Pavement is sure to make it a lasting and very satisfactory pavement. It is pleasing in appearance, smooth, yet not slippery, our firemen heartily endorse it for either horses or automobile trucks, and we are all very much pleased with it.

(Signed) BOYD HAMILTON,
Mayor of Coeur d'Alene, Idaho.

East Eleventh and Milwaukie Streets Portland, Oregon

"The main thoroughfare leading south."

Hassam Pavement in Driveway, Parliament Building Grounds, Victoria, British Columbia

Coeur d'Alene, Idaho, February 1, 1911.

Inland Empire Hassam Paving Company,
Spokane, Wash.

Gentlemen:

The correct combination of trap rock, sand and cement thoroughly compacted, is the fundamental basis of all permanent pavement.

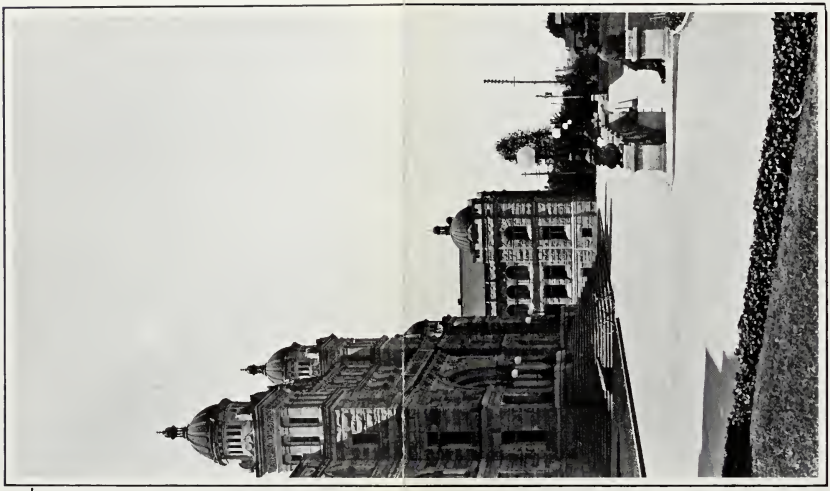
I believe that your method of paving embodies correct principles and produces a permanent pavement which for appearance, durability and use, both for horses and automobiles, is equal, if not superior, to any pavement now in use.

Your pavement in Coeur d'Alene has an excellent appearance, is not slippery nor dusty, will wear, I believe, indefinitely, with practically no cost for repairs, and is from all points of view, cost included, a thoroughly satisfactory pavement.

Yours truly,

(Signed) H. B. WRIGHT,
City Engineer, Coeur d'Alene, Idaho.

Nineteenth Street
Portland, Oregon



Hassam Pavement at Entrance to Parliament Buildings, Victoria, British Columbia

INMAN-POULSEN LUMBER COMPANY
Oregon Pine Lumber
Annual Capacity 150 Million Feet

Portland, Oregon, July 5, 1910.

Oregon Hassam Paving Company, Board of Trade Building, City.

Dear Sirs: We beg to say that the block of Hassam Pavement recently laid in our yard fully meets our expectation. We do not hesitate to recommend the same as the most satisfactory pavement we have yet seen. This is especially true because of its rough surface which furnishes a team with a good footing; in our case this is a prime requisite.

Very truly yours,
INMAN-POULSEN LUMBER CO.,
Per H. B. VanDuzer.

Form 2289

NIGHT LETTER

THE WESTERN UNION TELEGRAPH COMPANY

INCORPORATED

25:000 OFFICES IN AMERICA — CABLE SERVICE TO ALL THE WORLD

ROBERT C. CLOWRY, PRESIDENT — BELVIDERE BROOKS, GENERAL MANAGER

RECEIVER'S NO.	TIME FILED	CHECK

RECEIVED AT **Lewiston, Idaho** ALWAYS OPEN

COPY

Worcester, Massachusetts, September 25, 1911.

L. J. Perkins, Mayor, Lewiston, Idaho.

Just awarded 11,000 yards of straight Hassam Pavement to the Hassam Paving Company. Granite blocks and Hassam Pavement the two most popular pavements in Worcester.

F. H. CLARK, Street Commissioner.

CITY OF SPOKANE
Headquarters Fire Department

Spokane, Washington, September 5, 1911.

Inland Empire Hassam Paving Company, 322 Lindelle Block, Spokane Wash.

Gentlemen: Referring to your request for a letter giving my opinion of Hassam Pavement. I am much pleased with it. Horses have perfect confidence on this pavement, whether wet or dry, and it appears to be easy on the horses. Auto-trucks cannot skid when on Hassam, and for our department consider it the best in the city.

Yours truly,

A. H. MYERS,
Chief Engineer, Fire Department.

Stockton, California, September 25, 1911.

The Mayor of Lewiston, Lewiston, Idaho.

Hassam Pavement has given entire satisfaction in this city where it has been laid during the past three years. The City Council awarded the Hassam people a contract when they were $1,532.36 higher than the bid for standard asphalt pavement. You will make no mistake by putting down Hassam.

OSCAR E. WRIGHT,
Superintendent of Streets of the City of Stockton.
HENRY R. BUDD, City Engineer.

EXTRACT FROM REPORT OF COMMITTEE

To the East Sprague Avenue Improvement Club.

Gentlemen: The undersigned, a committee to investigate the different paving materials used in the City of Portland, would respectfully submit the following:

The committee were in Portland on April 10 and found that a variety of pavements were being used, such as brick, basalt blocks, creosote blocks, bitulithic, granitoid, asphalt and Hassam concrete.

The investigation was made under favorable circumstances, as regards the merit of paving under wet weather, it raining continuously during the stay of the committee in Portland.

HASSAM: This pavement is all in good condition, some of it having been laid for four years. On one street leading to a brick yard over which there is much heavy traffic, the pavement was examined carefully and there was little or no evidence of wear. It has never been repaired and to all outward appearances is as good as the day it was laid. This pavement is being laid quite extensively in Portland; there being something like fifteen miles now in use, and we understand that the contract has been let for about twenty miles more.

This pavement seems to take on the nature of a conglomerate, and is as hard as stone, being composed of crushed basaltic rock, sand and cement. The surface is rough, so that there is no danger of horses slipping or automobiles skidding. Teamsters speak very favorably of it on this account. On streets where asphalt has formerly been laid the street railway company have used this kind of pavement in many instances between the tracks and we noticed on these streets that the teamsters kept on this pavement.

As it was raining we were permitted to make our examination under the worst conditions possible. There were very few low places where the water could stand, and we saw no places where the pavement was disintegrated in any way. There were a few cracks or checks, but not any chipping.

We saw them laying this pavement and they were doing it in better shape in Portland than in Coeur d'Alene, as the surface there shows none of the large rocks we have complained of in our former reports. They seem to be confining themselves strictly to their contract and specifications.

It is the opinion of your committee that the Hassam Pavement, if laid according to specifications, taking into consideration the cost of the material, durability, maintenance of same, and the rough surface which is especially adapted for heavy traffic, is the best of any of the pavements we have seen, and we would respectfully recommend the same for East Sprague Avenue.

Respectfully submitted,

D. I. DONOVAN, Chairman.
F. L. McFADDEN.
E. G. ROSS. Committee.

Spokane, Washington, April 18, 1911.

PACIFIC COAST LICENSEES

HASSAM PAVING COMPANY OF BRITISH COLUMBIA
344 Granville St., Vancouver, B. C.

INLAND EMPIRE HASSAM PAVING COMPANY
Lindelle Building, Spokane, Wash.

OREGON HASSAM PAVING COMPANY
Board of Trade Building, Portland, Ore.

BUILDERS
OF
HASSAM COMPRESSED CONCRETE
PAVEMENTS

HASSAM PAVING COMPANY

OF

WORCESTER, MASSACHUSETTS

SLATER BUILDING
WORCESTER, MASSACHUSETTS

PACIFIC COAST DIVISION OFFICE

PORTLAND, OREGON

PORTLAND PRINTING HOUSE COMPANY
388 TAYLOR STREET
PORTLAND, OREGON

CONTRACT.

THIS AGREEMENT this day of between the HASSAM PAVING COMPANY, a corporation located and doing business at Worcester in the County of Worcester and Commonwealth of Massachusetts, party of the first part, and the , a corporation located in the County of and party of the second part

WITNESSETH:

THAT WHEREAS the party of the first part is the owner by purchase and assignment of letters patent of the United States granted to Walter E. Hassam and Charles K. Pevey, dated May 1, 1906, and numbered 819,652, for an improvement in Pavements and Processes of Laying the Same, which patented improvement said party of the second part desires to make and use in certain streets hereafter named.

NOW, THEREFORE the parties have agreed as follows:

1. The party of first part hereby gives to the party of the second part the right to make and use said improved foundations and process according to the approved specifications for laying HASSAM CEMENT—Concrete foundation for any surface attached hereto, marked "A," under the whole or any part of the area of pavement to be laid in the of for the term of one year from the date hereof.

2. The party of the second part agrees to make full and true returns to the party of the first part on the fifteenth day of every month in the year, of the number of square yards made by said party of the second part during the previous month, of said improved foundation and process; and if said party of the first part shall not be satisfied in any respect with any such returns, then the party of the first part shall have the right, either by its officers or its attorney to examine any and all of the books of account of said party of the second part containing any items, charges, memoranda, or information relating to the making or laying of said patented improvement or process, and upon request made said party of the second part shall produce all such books for said examination.

3. The party of the second part agrees to pay the party of the first part, as a license fee or royalty ten cents for each and every square yard of foundation (known as Hassam foundation) described in said letters patent, when made or used by the party of the second part under any kind of pavement.

The whole of said license fees or royalties for each month as hereinbefore specified shall be due and payable on or before the fifteenth day of every month for the foundation made during the previous month.

4. The party of the second part agrees not to contest the validity of said letters patent and the rights of the party of the first part thereunder at any time during the continuance of this agreement, provided that the party of the first part is not in default in the per-

formance of its covenants hereinafter set forth in sections 6 and 7.

5. Upon the failure of said party of the second part to keep each and all of its agreements herein set forth, which are to be construed as conditions of this license, the party of the first part may at its option terminate this license, and such termination shall not release said party of the second part from any liability due to said party of the first part.

6. Said party of the first part covenants with said party of the second part that it has full right and title to make this license as above set forth, and that there is no prior grant or license under said patent in the territory above described.

Said party of the first part further covenants that in case said letters patent shall be infringed, the party of the first part shall at its own cost take all proceedings to defend and protect the same.

And in default of taking such proceedings by the party of the first part after the expiration of sixty days after said notice by the party of the second part, it shall be lawful for the party of the second part by notice in writing given to the party of the first part or left at its usual place of business to terminate this agreement.

7. The party of the first part hereby covenants and agrees with the party of the second part, that it will protect and save harmless the said against any and all suits brought against it on account of the use of said letters patent, claiming infringement of their patents or anything of such nature.

8. The party of the first part hereby further agrees that it will send an expert man to instruct the said in the manner of laying said foundation for a period of time of such length as will be necessary so that the of said can thoroughly and competently build said foundation, and that said party of the first part will bear the full and entire expense of sending said expert.

IN WITNESS WHEREOF the said by its thereto duly authorized, hereunto sets its name and corporate seal, and the Hassam Paving Company, by Walter E. Hassam, its Agent, thereunto duly authorized, hereunto sets its name and corporate seal the day and year first above written.

.....

By.....

.....

By.....

.....

"A"

APPROVED SPECIFICATIONS FOR LAYING A HASSAM CEMENT-CONCRETE FOUNDATION FOR ANY SURFACE.

EXCAVATION: The roadway shall be excavated by the contractor to the required depth from the finished grade of the street. Upon the sub-grade, after being thoroughly rolled or compressed to a true and even surface, broken stone or gravel shall be spread to the thickness of which the surface will be at the required top grade of foundation, after rolling or compressing.

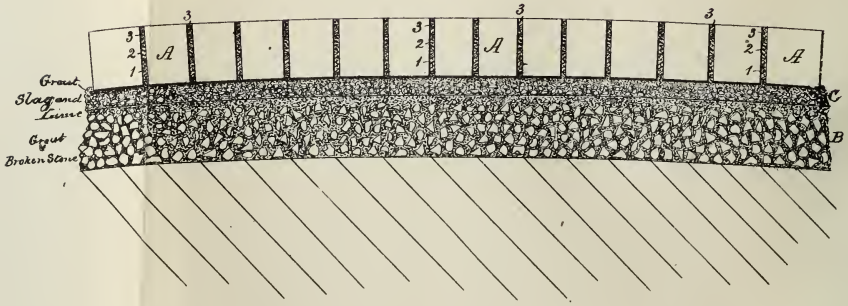
After this stone has been thoroughly compacted and firmly imbedded and the voids reduced to a minimum, it shall be grouted with a grout of Portland cement and sand consisting of one part Portland cement and four (4) parts sand. This grouting shall be poured upon the foundation until all the voids are filled and the grout flushes to the surface. The stone to be rolled or compressed during the process of grouting.

(No Model.)

J. MURPHY.

Pavement.

No. 238,706. Patented March 8, 1881.



WITNESSES:

W. W. Hollingsworth

Amos W. Hart

INVENTOR:

John Murphy

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN MURPHY, OF COLUMBUS, OHIO.

PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 238,706, dated March 8, 1881.

Application filed January 26, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN MURPHY, of Columbus, in the county of Franklin and State of Ohio, have invented a new and Improved Pavement; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement in the class of pavements composed of stone blocks laid upon a concrete or other water-tight foundation.

I form my pavement of stone blocks, broken stone, and grout, applied and combined as hereinafter described, reference being had to accompanying drawing, which shows a vertical section of the pavement and road-bed.

The letter A indicates the rectangular stone blocks forming the wearing-surface of the pavement.

B is a layer of broken stone and grout; C, a layer of slag and lime and a grout and sand filling for the interstices of the blocks.

In constructing the pavement the first step is to prepare the road-bed. If this be wet or springy soil it should be underdrained, and is, in any case, to be properly graded. Upon such bed I spread a layer of broken stone or slag, B, to the depth of about six (6) inches, which is grouted and then rolled with a heavy roller, to form a firm and solid foundation. If the soil is dry and solid the broken stone may be dispensed with and a thin layer of gravel employed instead, which must, however, be well rolled. Having thus formed a firm bed or foundation, the next step is to deposit thereon a layer, C, of pulverized slag and lime mixed with sand. This layer should be about two or three inches in depth. The stone blocks A are then laid in courses, so as to break joints, and the interstices are filled with grout, 1, to the depth of two or three inches from the bottom of the blocks. I next spread clean screenings over the stone surface until the interstices are filled or nearly so. This filling, 2, is then packed or pressed until it has a depth of one or two inches over the grouting. Its function is to keep the blocks steady in their place while being rammed, which is the succeeding step. After ramming the interstices are filled to the top with grouting, 3, thus making a level surface, which completes the pavement proper. Upon its surface a coat of sand is then spread, and the pavement will be ready for use in from twelve to twenty-four hours.

The grout I employ is made of the following ingredients in, or about the proportions stated: Lime, ground or slaked, (blue lias preferred,) twenty per centum; sand, clean and pure, thirty per centum; iron slag or furnace cinders, twenty-five per centum; Portland cement ten per centum; silica, or oxide of iron, ten per centum; cast-iron filings, sulphur, &c., five per centum.

The layer of slag and lime C, under the stone blocks A, is well saturated with water in the process of constructing the pavement, and becomes very hard. The grout is very adhesive, and becomes harder with time, and hence in the course of a year the pavement becomes practically a solid stony mass, of about sixteen inches in depth, which is impervious to water. The pavement is, moreover, sufficiently elastic to render it easy for vehicles, while the noise incident to their passage over it is considerably deadened.

The cheapness and durability of the pavement especially commend it.

I am aware that block-stone pavements have been used in which the interstices between the blocks were filled with asphaltum, concrete, or other mastic; but such filling disintegrates and becomes useless in a few years; whereas my pavement becomes more and more hard and solid with lapse of time, and improves with age.

What I claim is—

The improved pavement, formed of the broken stone and grout foundation B, the layer C, of slag and lime, the stone blocks A, and the interstitial filling of grout, all as shown and described.

JOHN MURPHY.

Witnesses:
J. D. SULLIVAN,
J. G. ODEL.

UNITED STATES PATENT OFFICE.

GEORGE A. BAYARD, OF BELLEFONTE, PENNSYLVANIA.

CONCRETE PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 381,667, dated April 24, 1888.

Application filed December 28, 1887. Serial No. 259,258. (No specimens.)

To all whom it may concern:

Be it known that I, GEORGE A. BAYARD, a citizen of the United States, residing at Bellefonte, in the county of Centre and State of Pennsylvania, have invented a new and useful Improvement in Concrete Pavements, of which the following is a specification.

My invention relates to improvements in concrete pavements, which will be hereinafter more fully described.

I first lay a foundation or base of coarse broken stone and ashes or pebbles and roll the same until thoroughly settled, after which I mix broken stone, cinders, and pebbles with tar and form a second or intermediate layer of this. This intermediate layer is preferably from three to four inches thick, and after it has been thoroughly rolled I spread over its surface a layer (from one-half to two inches thick) of sand or ashes, small pebbles, and coal-tar well mixed together. This layer must also be consolidated by rolling and the surface rendered as smooth as possible. This third or surface layer is intended to fill up all depressions, smooth the uneven places, and present a surface such as the finished work is intended to have. Over this surface is spread a filling-coat consisting of coal-tar, resin, and unslaked lime, in the following proportions: coal-tar, twenty gallons; resin, two to two and one-half pounds; lime, two to two and one-half pounds. These ingredients must be well mixed together and boiled, and the mixture is poured over the surface of the last or surface layer in a liquid state. All pavements of this general construction—namely, one or more layers of broken stone joined by tar or cement—are very porous, and this filling-coat is designed to fill all the pores and interstices, so as to render the pavement perfectly solid and water-tight. To this end the mixture is poured on the pavement until no more will be absorbed. Ordinary surface-cement, as Portland or its equivalent, is now spread over the pavement, and it is again rolled, after which sharp sand is spread over the surface. This construction makes a pavement which is water-tight and solid, with no appreciable porosity, therefore allowing no chance for it to absorb moisture from the ground and remain in a damp state. The water will also flow off the surface more readily and quickly.

It will be seen that there are three distinct layers in this pavement—namely, a foundation-layer of coarse stone, an intermediate layer of smaller stone, cinders, pebbles, and coal-tar, and a surface-layer of sand or ashes, small pebbles, and coal-tar well mingled. These three layers, after being successively rolled, are finally consolidated as firmly as possible, are then united by a filling coat or mixture which percolates through the pores and interstices which have not been closed by rolling and unites the layers to form a perfectly water-tight impervious mass. The lime in the filling renders the same very hard when it becomes calcined by exposure. Before this filling mixture becomes thoroughly hard, however, the surface-cement, as before described, and the sand are added.

Having thus described my invention, I claim as follows:

The improved concrete pavement herein described, consisting of a foundation-layer of coarse broken stone and ashes or pebbles, a second layer of broken stone, cinders, pebbles, and tar, a third layer of sand, small pebbles, and coal-tar, resin, and unslaked lime, and a surface-coating of cement and sand, as described and specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE A. BAYARD.

Witnesses:
WILBUR F. REEDER,
W. E. GRAY.

UNITED STATES PATENT OFFICE.

THOMAS F. HAGERTY, OF SAN FRANCISCO, CALIFORNIA.

CONCRETE PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 413,278, dated October 22, 1889.

Application filed October 22, 1888. Serial No. 288,848. (No specimens.)

To all whom it may concern:

Be it known that I, THOMAS F. HAGERTY, a citizen of the United States, residing at San Francisco, county of San Francisco, State of California, have invented new and useful Improvements in Bituminous Concrete Pavements for Streets, Sidewalks, Roofing, and Flooring, of which the following is a specification.

Heretofore asphaltum concrete pavements when laid on streets or sidewalks in a homogeneous mass required to have the foundation-bed prepared for the reception of the bituminous covering, and the cumbersome heating apparatus and fuel, asphaltum, tar, oil, gravel, sandstone, &c., were brought to the place, encumbering the streets for days and weeks, involving a great deal of time and labor. To obviate this difficulty is one of the main objects of my invention; and to this end my improved process consists in preparing a solid foundation with as even a surface as possible by laying a sufficient thickness of coarse rubble and a top coating of a thin grout prepared with sand and cement, or with evenly-laid stone blocks having a grout of cement and sand poured between the interspaces, or in the case of sidewalks preparing the surface with stone rubble and leveling off the top with either sand or mortar, the object in all cases being to secure a well-prepared even surface to receive the top dressing, which can be accomplished by any of the well-known methods now in use.

Previous to laying the top dressing on a road-bed which has been coated with a grout cement, I coat the same when dry with a wash of hot pitch-tar all over the surface. Upon a foundation thus prepared I lay slabs of bituminous sandstone or other concrete asphaltum compounds of a uniform thickness. In practice I prefer to use bituminous rock—such as is now obtained in many parts of California—for the reason that nature has provided it with the greatest amount of fine quartz, sand, or gravel with the least practical quantity of volatile carbonaceous matter to unite said sandy particles, and cause them to adhere and form a black firm compact elastic mass.

In order to better unite the bituminous sandstones of different qualities and consistency to produce the best results obtainable, and for sake of economy in handling and transportation, the slabs can be manufactured with better advantage at the mines. The material is reduced by heat to the proper consistency by any of the well-known methods, and by suitable presses and molds are formed into slabs of, say, two inches thick, or of any practical thickness and size to conveniently handle without bending or breaking.

I do not confine myself to reducing the natural bituminous sandstone to a plastic consistency by means of artificial heat in order to press it in the molds, as by sufficient pressure applied to the natural material the disintegrated particles will be forced to adhere and form a homogeneous mass.

The process of manufacturing the slabs or blocks forms no part of the present invention, and may be accomplished by any of the well-known methods.

Slabs thus prepared are laid upon a road-bed or sidewalk previously described as close as practicable, and by means of a heavy heated roller are pressed, so that by the heat and pressure applied the edges are caused to unite and the under side to adhere to the pitch-tar coating, thus forming a level homogeneous mass.

It is not an essential part of my invention to have a road-bed of a hard, even, uniform surface, as it is obvious that when the heat and pressure are applied the plastic mass will conform to any slight unevenness of surface that may exist; nor is it essential to previously wash the surface of the road-bed with pitch-tar, as the nature of the material used may be such as to have sufficient volatile carbonaceous matter to cause it to adhere without such coating.

I claim—

1. The process of covering streets and other surfaces with bituminous or concrete substances capable of being softened by heat in order to make pavements floors, or roofs, consisting, first, in pressing the bituminous or concrete substance into blocks or slabs; secondly, laying these blocks or slabs upon the roadway or surface to be covered, so that their edges will be in juxtaposition, and, thirdly, in passing a heated iron or roller over the edges of the adjoining blocks or slabs, so

as to unite their edges by heat, substantially as described.

2. The process of making pavements, roofs, and floors, consisting, first, in preparing a foundation of coarse rubble and a top coating of thin grout; secondly, coating the surface of the foundation with hot pitch-tar; thirdly, placing upon said pitch-coated foundation blocks or slabs of bituminous or concrete substances which are capable of being softened by heat; fourthly, uniting the edges of such bituminous or concrete blocks or slabs by means of heat, substantially as above described.

THOMAS F. HAGERTY.

Witnesses:
JOHN HAGERTY,
DANIEL HAGERTY.

No. 675,430. Patented June 4, 1901.

F. J. WARREN.

PAVEMENT OR ROADWAY.

(Application filed Jan. 9, 1901.)

(No Model.)

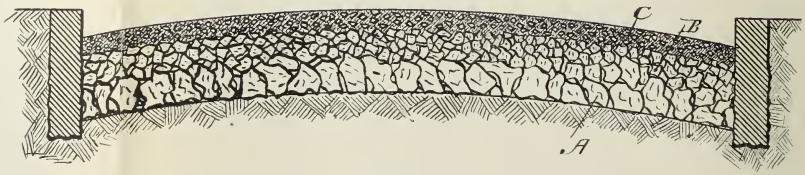


Fig. 1.

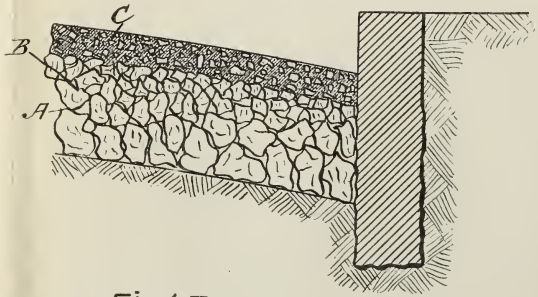


Fig. 2.

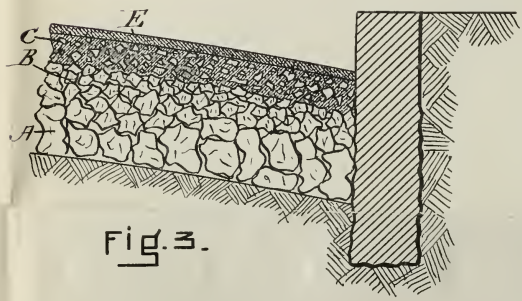


Fig. 3.

WITNESSES.

J. M. Dolan

Saul Sippenstein

INVENTOR.

Frederick J. Warren

by his attys

Clarke & Raymond

UNITED STATES PATENT OFFICE.

FREDERICK J. WARREN, OF NEWTON, MASSACHUSETTS.

PAVEMENT OR ROADWAY.

SPECIFICATION forming part of Letters Patent No. 675,430, dated June 4, 1901.

Application filed January 9, 1901. Serial No. 42,626. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK J. WARREN, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Pavements or Roadways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to a pavement or roadway having a foundation layer of stone such as is used in ordinary Macadam or Telford roads or a combination of the two, and upon which is arranged one or more layers of smaller stone coated or partly coated with coal-tar, coal-tar pitch, asphalt, or a mixture of them or other equivalent bituminous material, and which is thoroughly rolled preparatory to receiving a finishing or binding layer consisting of crushed or broken stone or gravel mixed with fine crushed screenings, sand, gravel, or other equivalent earthy matter in such proportion that the fine particles of stone, sand, or gravel in said surface or binder layer will readily enter and fill the large voids and spaces in and between the larger stone and gravel, the said last-named ingredients being first thoroughly mixed with or without heating and preferably by suitable machinery with coal-tar, coal-tar pitch, asphalt, or a mixture of them or equivalent bituminous material, thoroughly incorporated with them and in such proportions as to form a solid impervious bituminous wearing surface or binder united by pressure and by permeation with the intermediate course or layer of stone upon which it is erected, and with the voids and spaces therein the under surface of the said surfacing or binder layer knits. This surfacing or binding layer is preferably of uniform thickness throughout and consolidated by means of pressure or a heavy steam-roller.

The invention will now be described in connection with the drawings, wherein—

Figure 1 is a view in vertical section of a pavement having the features of my invention. Fig. 2 is a detail view in section, enlarged, of Fig. 1. Fig. 3 is a detail view in section, enlarged, of a modification.

The foundation layer of stone A may be of the Macadam order or the Telford arrangement or a combination of the two, and it is laid in any usual way. Upon it is arranged the layer B of smaller stone, which preferably are coated or partly coated with coal-tar, coal-tar pitch, asphalt, or a mixture of them or other equivalent bituminous material. The stones composing this layer will vary in size from two inches in diameter to six inches in diameter, and the layer is thoroughly rolled into the foundation layer and will when completed furnish a surface which is coarse and a constituency which is more or less cellular in character. Upon and into this prepared surface is then thoroughly rolled a heavy layer of specially-prepared ingredients which have reference to their packing and binding character with regard to each other and also with respect to the character of the surface which is to receive it and of the voids, cells, or spaces in it. This layer is a binding or surfacing layer, and it is constituted to unite with the rough surface of its supporting-layer by entering the spaces, channels, and voids between the stones thereof to a very considerable extent and so as to fill them. It is further constituted to make a continuous, homogeneous, solid layer of its own composition above the line of union with the layer below and to provide a hard, firm, solid, waterproof, tenacious, non-friable covering for the foundation, and the surface of which may serve as the finished surface of the pavement or may act to receive a finishing-surface of a somewhat different character. It is obvious from what I have said that this layer must be very carefully prepared, as upon it hinges the effectiveness of the invention. It is composed of a mixture of relatively coarse particles one-half inch to three inches in diameter, intermediate particles one-tenth inch to one-half inch in diameter, and fine particles (an impalpable powder) to one-tenth inch in diameter, suitably proportioned, graded, and thoroughly mixed, either hot or cold, with an incorporated composition of coal-tar, coal-tar pitch, asphalt, or other equivalent bituminous material or a combination of them. The ingredients are such as will pass through screens having a three-inch mesh, a half-inch mesh, one-tenth of an inch mesh, one-fortieth of an inch mesh, one-eightieth of an

inch mesh, and one two-hundredth of an inch mesh. Of the ingredients passing through a screen of three-inch mesh and remaining upon a screen of one-half-inch mesh I take about seventy parts. Of the ingredients passing through a screen of a one-half-inch mesh and remaining upon a screen of one-tenth-inch mesh I take twenty parts and the same as to screens of one-tenth-inch mesh and one-fortieth-inch mesh. I take four parts of screens of one-fortieth-inch mesh and one-eightieth-inch mesh, three parts of screens of one-eightieth-inch mesh and one two-hundredth-inch mesh, and of material passing through a screen of one-two-hundredth-inch mesh one part. To one hundred parts, by weight, of these ingredients, in the proportions above stated, there are added about six parts of the coal-tar, coal-tar pitch, asphalt, or a mixture of them or other equivalent bituminous material, which, preferably, has been heated in a separate vessel, and the ingredients and the bituminous material are intimately intermingled. The percentage of the bituminous material to the aggregate of ingredients may be varied and to obtain the best results must be varied as the shape and size of the larger particles in the aggregate vary and also with the degree of purity of the bituminous material used.

The surface of the roadway may or may not be covered with a thin coating of bituminous mixture of sand, gravel, screenings, or gravel mixed with coal-tar or other equivalent material.

Referring again to the drawings, C represents the layer of prepared ingredients, and E, Fig. 3, the thin finishing coating above referred to.

I am aware that tarred Macadam pavements or roadways have been used in which the several courses of stone are coated with tar in an effort to hold the top course of tarred stone about two inches in size in position by spreading over and rolling into the surface a fine mixture of sand and tar; but this only partially fills the voids in the top course of stone, leaving voids in the lower portion of this course of stone, so that under traffic the stones become displaced and lose the essential solidity desired. I am also aware that asphalt-pavement mixtures have been made with particles of sand and pulverized stone carefully graded in size from about one-tenth of an inch in diameter down to an impalpable powder, so as to secure the least possible voids and greatest possible density within those limits.

By my improvement I obviate the difficulty of lack of solidity of the top course of the tarred Macadam pavements as now laid by thoroughly mixing and incorporating with the larger particles of the aggregate finer particles of crushed stone or sand or other equivalent, so graded as to give a minimum of voids, which are then filled with coal-tar, coal-tar pitch, asphalt, or other equivalent bituminous material, forming a solid bituminous concrete wearing-surface and which I prefer to lay from one to three inches or more in thickness. By using in the concrete coarse particles of stone or gravel from about one-half inch to about three inches in diameter and medium particles of the same from one-tenth inch to one-half inch in diameter my invention provides a composition having fewer voids, and therefore requiring less of the bituminous material to make a solid concrete, than is now used in surface mixture for asphalt or other bituminous pavements.

The concrete mixture which I have described may also be used as an intermediate or binder course between hydraulic-cement concrete, bituminous-concrete, or broken-stone foundation and the wearing-surface of an ordinary asphalt pavement and is an improvement on binder courses previously used, for the reason that it forms a more solid and impervious binder course.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a tar, asphalt or bituminous, Macadam roadway or pavement, a wearing surface or binder course composed of coarse particles one-half inch to three inches in diameter, intermediate particles one-tenth inch to one-half inch in diameter and fine particles (an impalpable powder) to one-tenth inch in diameter in about the proportions named and intimately combined either hot or cold with coal-tar, coal-tar pitch, asphalt or other equivalent bituminous material and rolled upon a prepared foundation to form a union therewith and a solid, water-tight, bituminous consistency, substantially as set forth.

2. The combination in a pavement or roadway of a foundation layer of large stone, a suitable layer of small stone coated with bituminous material and rolled to a union with the larger stone and a rough surface and a layer of composition comprising coarse particles one-half inch to three inches in diameter, intermediate particles one-tenth inch to one-half inch in diameter and fine particles (an impalpable powder) to one-tenth inch in diameter in about the proportions indicated, mixed hot or cold with coal-tar, coal-tar pitch, asphalt or other equivalent bituminous material spread upon and rolled into the prepared foundation making union with the surface thereof and filling the voids and spaces therein whereby it is knitted thereto and whereby also a solid, water-tight bituminous surfacing is provided.

FREDERICK J. WARREN.

Witnesses:
F. F. RAYMOND, 2d,
J. M. DOLAN.

Sections 374, 375, 376, 377, 378 and 379 of the Charter of the City of Portland.

COUNCIL MAY ORDER IMPROVEMENT.

SECTION 374. The Council, whenever it may deem it expedient, is hereby authorized and empowered to order the whole or any part of the streets of the city to be improved, to determine the character, kind and extent of such improvement, to levy and collect an assessment upon all lots and parcels of land specially benefited by such improvements, to defray the whole or any portion of the cost and expense thereof, and to determine what lands are specially benefited by such improvement and the amount to which each parcel or tract of land is benefited.

CITY ENGINEER TO MAKE PLANS AND SPECIFICATIONS; DISTRICTS; ASSESSMENT.

*SECTION 375. Whenever the Council shall deem it expedient or necessary to improve any street or streets or any part or parts thereof within a district in the City of Portland, it shall require from the City Engineer plans and specifications for an appropriate improvement and estimates of the work to be done and the probable cost thereof, and the City Engineer shall file such plans, specifications and estimates in the office of the Auditor of the City of Portland. If the Council shall find such plans, specifications and estimates to be satisfactory, it shall approve the same and shall determine the boundaries of the district benefited and to be assessed for such improvement, and the action of the

Council in the creation of such assessment district shall be final and conclusive. The Council shall by resolution declare its purpose of making said improvement, describing the same and including such Engineer's estimate of the probable total cost thereof, and also defining the boundaries of the assessment district to be benefited and assessed therefor. The action of the Council in declaring its intention to improve any street or streets or any part or parts thereof, directing the publication of notice thereof, approving and adopting the plans, specifications and estimates of the City Engineer, and determining the district benefited and to be assessed thereby, may all be done in one and the same act.

*As amended June 3, 1907.

Publication of Resolution; Notices.

Section 376. The resolution of the Council declaring its purpose to improve the street shall be kept of record in the office of the Auditor and shall be published for ten consecutive publications in the city official newspaper. The City Engineer within five days from the first publication of said resolution shall cause to be conspicuously posted at each end of the line of the contemplated improvement a notice headed "Notice of Street Work" in letters of not less than one inch in length, and said notice shall contain in legible characters a copy of the resolution of the Council and the date of its adoption, and the Engineer shall file with the Auditor an affidavit of the posting of said notices,

stating therein the date when, and places where the same have been posted.

Remonstrances.

*Section 377. Within twenty days from the date of the first publication of the notice required to be published in the preceding Section, the owners of four-fifths or more in area of the property within such assessment district may make and file with the Auditor a written objection to or remonstrance against said proposed improvement, and said objection or remonstrance shall be a bar to any further proceedings in the making of such improvement for a period of six months unless the owners of one-half or more of the property affected as aforesaid shall subsequently petition therefor; provided, that if any such objection, remonstrance or petition shall be signed by the agent or attorney of any property owner, there shall be filed with the Auditor within the time provided for such remonstrance or petition the written authority for such agent or attorney to sign any such remonstrance or petition, otherwise the signature shall be disregarded.

*As amended June 3, 1907.

Jurisdiction of Council—When Acquired.

*Section 378. If no such objection or remonstrance be made and filed with the Auditor within the time designated, or if any remonstrance filed is not legally signed by the owners of two-thirds of the property affected the Council shall be deemed to have acquired jurisdiction to order the improvement to be

made, and the Council may thereafter and within three months from the date of the final publication of its previous resolution by ordinance provide for making said improvement, which shall conform in all particulars to the plans and specifications previously adopted.

When the Council shall, by ordinance, provide for making an improvement, the city shall be deemed to have appropriated and acquired ownership of all earth above grade and within the street lines for said improvement and no private ownership shall thereafter be claimed in said earth.

*As amended June 7, 1909.

Executive Board to Make Contract.

Section 379. Upon the approval of said ordinance by the Mayor, or if the same shall become valid without his approval, the Auditor shall present to the Executive Board, at its next regular meeting, a copy of said ordinances, and the estimates, plans and specifications previously prepared by the City Engineer and adopted by the Council. Thereafter the said Executive Board, without delay, shall give notice by publication for not less than five successive days in the city official newspaper, inviting proposals for making said improvement. The Executive Board shall have the power to award the contract or contracts for said improvement and to impose such conditions upon bidders with regard to bonds and securities, and guarantees of the good faith and responsibility of bidders, for insuring the faithful completion of the work in strict accordance with the specifications therefor, and to make all rules and regu-

lations in the letting of contracts that may be considered by said board as advantageous to the city. Such contract or contracts shall be let to the lowest responsible bidder for either the whole of said improvement or such part thereof as will not materially conflict with the completion of the remainder thereof, but said board shall have the right to reject any or all proposals received. It shall be the duty of the Executive Board to fix the time in which every such improvement shall be completed and it may extend such time should the circumstances warrant. The said board shall have power and authority to make all written contracts, to receive and approve all bonds authorized by this section, to provide for the proper inspection and supervision of all work done under the provisions of this Article, and to do any other act to secure the faithful carrying out of all contracts, and the making of improvements in strict compliance with the ordinance and specifications thereof.

No. 2505 2

United States Circuit Court of Appeals
for the Ninth Circuit

HASSAM PAVING COMPANY AND OREGON HASSAM PAVING COMPANY,

Appellees,

vs.

CONSOLIDATED CONTRACT COMPANY AND PACIFIC COAST CASUALTY COMPANY,

Appellants.

Transcript of Record (Two Volumes)
Vol. II

(pp. 346 to 387 and index to Vol. II)

UPON APPEAL FROM THE UNITES STATES DISTRICT COURT OF OREGON

LOUIS W. SOUTHGATE,
CAREY & KERR,
Solicitors and Counsel for Appellees.

JESSE STEARNS,
JOHN H. HALL,
Solicitors and Counsel for Appellants.

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Vol. II.

In the District Court of the United States

FOR THE DISTRICT OF OREGON.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation, Plaintiffs, vs. RELIANCE CONSTRUCTION COMPANY, a corporation; CITY OF HOOD RIVER, a municipal corporation, and NATIONAL SURETY COMPANY, a corporation, Defendants.	}

It is hereby stipulated and agreed by and between the parties to the above entitled cause that the testimony of A. C. Gilman to be adduced and used on behalf of defendants, may be taken under oath before Vivian Flexner, a Notary Public, as commissioner for that purpose who is not of counsel nor interested in said cause, at the office of John H. Hall and Jesse Stearns, in the city of Portland, Oregon, beginning on the 4th day of November, 1913, at 2 o'clock P. M., and thereafter from day to day as the taking of said deposition may be adjourned, and that said testimony may be taken

stenographically and put into typewriting and signed by the witness; and subject to all proper objections to the competency, relevancy and materiality thereof, and the testimony so taken may be read and used before the court in this cause as if the same had been taken in presence of the court.

CHAS. H. CAREY,
of Solicitors for Complainants.

JESSE STEARNS,
of Solicitors for Defendants.

IN THE DISTRICT COURT OF THE UNITED STATES

For the District of Oregon,

Hassam Paving Company, a corporation, and Oregon Hassam sam Paving Company, a corporation,
Plaintiffs,
vs.
Reliance Construction Company, a corporation; City of Hood River, a municipal corporation, and National Surety Comtany, a corporation,
Defendants.

Portland, Oregon, November 4, 1913.

Pursuant to stipulation for the taking of testimony at the office of John H. Hall and Jesse Stearns, Railway Exchange, at 2 o'clock P. M., present Jesse Stearns, counsel for defendants, at request of Judge Charles H. Carey the proceedings were adjourned to November 5, 1913, at 3 o'clock P. M.

IN THE DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF OREGON,

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation,	Plaintiffs,
vs.	
RELIANCE CONSTRUCTION COMPANY, a corporation; CITY OF HOOD RIVER, a municipal corporation, and NATIONAL SURETY COMPANY, a corporation,	Defendants.

Portland, Oregon, November 5, 1913.

Pursuant to stipulation for the taking of testimony at the office of John H. Hall and Jesse Stearns, Railway Exchange, at 3 o'clock P. M., present Charles H. Carey, counsel for plaintiffs, and Jesse Stearns, counsel for defendants, by agreement of parties the proceedings were adjourned to November 6, 1913, at 2 o'clock P. M.

IN THE DISTRICT COURT OF THE UNITED STATES

For the District of Oregon.

Hassam Paving Company, a corporation, and Oregon Hassam Paving Company, a corporation, Plaintiffs, vs. Reliance Construction Company, a corporation; City of Hood River, a municipal corporation, and National Surety Company, a corporation, Defendants.	}

Testimony taken before Vivian Flexner, Notary Public, at Portland, Oregon, November 6, 1913.

BE IT REMEMBERED, That this cause came on for hearing before me, a Notary Public, pursuant to stipulation hereto attached, and adjournment, on the 6th day of November, 1913, at 2 o'clock P. M., at the office of John H. Hall and Jesse Stearns, Railway Exchange, Portland, Oregon; present Charles H. Carey, counsel for plaintiffs, and Jesse Stearns, counsel for defendants.

Whereupon the following proceedings were had:

A. C. Gilman, a witness called on behalf of the

defendant, being first duly sworn by the Notary Public, testified as follows:

DIRECT EXAMINATION.

QUESTIONS BY MR. STEARNS:

Q. Mr. Gilman, state your age, residence and occupation.

A. I was born in Eureka, Wisconsin, in 1860; occupation has been mining, lumbering, farming, railroad work; present address is Chesterbury Hotel, Portland, Oregon.

Q. Now, Mr. Gilman, this is a suit in reference to—this is a suit brought for an infringement of an alleged patent for laying Hassam pavement; are you familiar, generally, with the so-called Hassam pavement?

A. Yes, sir.

Q. Will you state when you first saw a pavement resembling or made substantially like the Hassam pavement now in use in the City of Portland, Oregon?

A. Well, there are several kinds of pavement that resemble Hassam pavement, the so-called concrete pavement, but the first Hassam pavement I have ever seen is in Portland.

Q. Well, have you ever seen any pavement that was laid with crushed rock rolled or tamped, with a grouting of Portland cement, water and sand poured over it?

A. Yes, I have seen that; it wasn't called Hassam, though; it was a foundation for other

kinds of pavement, of cedar block pavement, generally, as a base of pavement the same as Hassam —the foundation. And I have seen sidewalks built of it and basement floors and engine house floors, factory floors, made in the same way.

Q. I will call your attention to the first pavement that you saw laid in that way of crushed rock with the grout poured over it—made with grout poured over it.

A. You mean street pavement?

Q. Any pavement.

A. It has been years ago, I saw an approach to a blacksmith shop made from it, when I was 14 years old.

Q. Where was that?

A. That was Eureka, Wisconsin. That was made from the street to the blacksmith shop; it was an approach to the shop.

Q. What was the size of it, as near as you can recollect?

A. It was about 25 feet from the walk to the shop—20 feet wide, probably; about 20 feet square.

Q. Did you see that when it was being made?

A. I did.

Q. Can you describe how it was being made.

A. They excavated about eight inches deep to receive the pavement, they then pounded up native stone there into suitable sizes and filled the excavation with loose rock, and then tamped it with a tamp bar or a block of wood, and then made the mixture of cement and sand and poured it over this

stone and then swept it in and mixed it in a liquid form; that is quite a thin solution.

Q. With water?

A. With water and cement and sand, so that it could be poured in and fill all the voids in the rock, and he then tamped it to be sure that the air was expelled and the mixture was made a solid mass and then they would mix up another batch and pour in and after it was finished he smoothed it up with a trowel or a piece of wood; amounted to the same thing as the present Hassam pavement.

Q. About how thick was the grout which was mixed with the sand and cement and water?

A. Oh, it was the thickness of thin mud, poured readily, so that the mixture would settle to the bottom; agitated and thoroughly mixed, and pour it in quickly; run just like thin mud would.

Q. In pouring the grout upon the loose rocks, state whether or not he poured it until the water flushed to the surface?

A. Why, no, the water would flush to the surface when he tamped it; that was an indication that it was filled; when the water stands on the surface it is an indication that the solution has gone to the bottom of the rock.

Q. To your knowledge how long was that pavement in existence; that is, as long as you personally know about it?

A. Oh, I saw it ten years afterward, but it must have been—the building burned about twenty

years afterwards, and I understand there was another building erected on the ground.

Q. Just what you know of your own knowledge, there about ten years. Now, you say that this resembled the present so-called Hassam pavement?

A. Yes, sir.

Q. In appearance?

A. Yes, sir.

Q. How fine were the rocks crushed—about how fine?

A. Oh, from an inch to two inches.

Q. Do you recall the name of the man who laid that?

A. No, I could not; he was a Russian. I can spell the name, I think, but I could not pronounce it.

Q. Well, you might spell it.

A. W-a-r-y-z-e-n-a-k; we used to call him "Washnaw" for short; that is as near as I can get to it.

Q. Did he own the blacksmith shop?

A. His son owned the shop; he was an old man, came from the old country and could not speak any English.

Q. Now, you mention having seen engine house floors laid in the same manner; where did you see that floor?

A. I have laid two engine house floors myself in the same manner and one factory floor.

Q. State first where the engine house floors were laid and about when?

A. There was one at Crystal Falls, Michigan; well, it was in front of the boilers, what we call a fire hole, laid in the same manner, excavated first and filled with rock, brick bats, and then a mixture of cement and sand and water poured over it and smoothed off.

Q. Was that tamped?

A. It was tamped several times.

Q. Before grouting or afterwards?

A. Both before and after grouting.

Q. About what size was that engine floor—engine house floor at Crystal Falls, Michigan?

A. I should judge eight feet by twelve feet.

Q. Now, you mentioned another one; now, when was that, I didn't get that.

A. About '88 or '89.

Q. Do you know whether that is still there?

A. No, that has been torn up, replaced by a new structure; changed and similar floor put in. It was replaced by a building a short distance away, a new engine house, it had the same kind of floor in it.

Q. When was it replaced, or when was the new engine house built, if you know, that took the place of the one that was destroyed, if you know?

A. About 1890.

Q. Now, you mentioned another engine house floor.

A. I built an excelsior factory at Grantsburg, Wisconsin, with a boiler house attached; the floor of the factory had a similar floor to the Hassam

pavement, and also the fire hole in front of the boiler.

Q. How large a floor was there at the excelsior factory; what was the size of it?

A. About 24x40 feet.

Q. And how did you make that?

A. Cleaned off the loose soil and tamped the sand—sandy country there—tamped the sand and then put in crushed rock. Bought a carload of crushed rock—

Q. What size?

A. —from half an inch diameter to three inches diameter, irregular shape, spread over about five inches of this rock and had men tamp it with tamping bars and mauls, and then mixed a thin solution of cement and sand and water and flooded it over the rock. We had boards around the sides of the floor to keep the water from running out—the grouting, and then tamped it and let it harden a couple of hours, and then finished it by rubbing with trowels and wooden straight edges.

Q. How did you pour the grout?

A. With pails or buckets; mixed up a large batch and then men would carry it in pails and pour it on and other men would sweep it in with brooms.

Q. When was that built?

A. That was built the year following the Spanish War.

Q. 1899?

A. 1899.

Q. Do you know whether that is there yet?

A. That is still there.

Q. Where was this?

A. Grantsburg, Wisconsin.

Q. Is that on any street; can you describe the location any more than an excelsior mill at Grantsburg, Wisconsin?

A. The only mill there; only excelsior mill there; just on the edge of town.

Q. Are those the only instances in which you have personally laid or supervised the making of the kind of pavement described that you now recall?

A. I used it as a starting of a foundation in a building; I don't recall any floors.

Q. Well, where have you used the same process in starting foundations of buildings?

A. In starting foundation walls it is quite common to use this method in making footings of walls.

Q. You mean by that putting in crushed rock and then pouring in grout over it?

A. Yes.

Q. Where have you used such methods?

A. In Minnesota, with the Iron Range Railroad, and I during that time laid several foundations for steel bridges, water tanks, and in depots. It is quite common to start the wall in that manner.

Q. Where was the depot?

A. In Duluth.

Q. What street?

A. Known as the Indian Depot.

Q. Have you seen that method used in other

concrete masonry?

A. I have.

Q. Describe it.

A. It is quite common to use it in building arches, railroad viaducts, aqueducts, build a form of wood and place loose rock over the form and fill it with grouting and build on top from that.

Q. Now, have you ever had occasion to dig up or see the pavement or floors that you have described broken so as to observe whether or not the grout penetrated the voids?

A. Yes, I have; in the factory I spoke of at Grantsburg we had occasion to enlarge our capacity and we had to take up some of the floor and found it to be a solid, compact mass of concrete.

Q. That is, the grout penetrated through all the voids of the rock?

A. Yes, and made a solid stone out of it.

Q. Now, what was the result of the tamping which you have described as using?

A. Well, we did it to expel the air.

Q. When you say "expel the air" what do you mean?

A. So that the mixture would fill the voids between the rock—form a bond.

Q. I mean the tamping before the grouting was put on.

A. That was done to tamp the stone as close together as we could, get them all in place and drive them into the soil, so that they would have a solid bearing; get them to be uniform on top.

Q. And, in other words, to decrease the voids in the rock; is that it?

A. Well, yes, it forces—

Q. It has that effect, hasn't it?

A. The sharp points of the rock would help fill the voids; in agitating it it would make the most compact mass possible.

Q. After the grouting was poured on you would tamp it still farther?

A. Yes, sir.

Q. To what extent?

A. We would tamp it until the water would raise to the surface, until we were sure that it was solid, all the voids were filled.

MR. STEARNS: You can cross examine.

CROSS EXAMINATION.

QUESTIONS BY MR. CAREY:

Q. What is your present occupation, Mr. Gilman?

A. At present I am unoccupied.

Q. What have you recently been engaged in?

A. Been with the Oregon Electric Railway, superintending work for them.

Q. What kind of work?

A. Well, there was a big slide on the Oregon Electric road; we have been down there excavating and ditching and grading.

Q. Have you ever laid any pavement for municipal work?

A. Never have.

Q. Not have engaged in the contracting business for pavements for cities?

A. No, sir.

Q. How does it happen that you came here to testify?

A. Why, I met Mr. Stearns and happened to make a remark that I didn't understand how this company could claim a patent on a process of Hassam pavement when it had been in common use for a great many years; I made that remark.

Q. And then he asked you to come here to testify?

A. He asked me—he said—spoke about a suit that he was interested in and asked me if I would make a deposition to that effect.

Q. Have you ever read over the Hassam patents that are involved in this suit?

A. No, I have not.

Q. Do you know the specifications of those patents?

A. I do not.

Q. Now, this pavement that you saw when you were fourteen years of age at the blacksmith shop in Wisconsin was the only pavement of the kind that you saw laid until you laid one in 1884 at Grantsburg, Wisconsin, was it?

A. I have seen lots of it, but I never personally had anything to do with them.

Q. You say you have seen a lot of it before that?

A. Yes.

Q. Where did you see it?

A. In basement floors, dwelling house basements, warehouse floors, in excavations for scales, for track scales, railroad track scales.

Q. We are speaking now of prior to the time you laid the pavement for the engine house that you have spoken of, in 1884; had you seen it laid anywhere else except the blacksmith shop prior to 1884?

A. I don't recall any place. It is in common use, though, the concrete mixture. Yes, I can remember another incident. A man laid sidewalks around his place, built a house in almost the same way.

Q. Where was that?

A. That was Eureka, Wisconsin.

Q. Eureka.

A. But instead of using cement he used lime mortar; made a grouting of lime mortar.

Q. What was his name?

A. His name was Hager.

Q. Does he live there yet?

A. No, he has been dead years ago; I think the house is still standing; was the last I knew.

Q. Where is the house?

A. Well, it is on what we call Hager's Hill in Eureka, right on the edge of town.

Q. Well, what is the difference in the method you have described from the usual method of using concrete as generally used?

A. Well, the concrete is generally mixed in a

wet solution, the water is mixed with rock and cement and then poured.

Q. Then the essential difference is that in the cases you have described some rock was first laid and tamped and then grouting poured in on it, whereas generally the rock is mixed with the cement before it is poured in?

A. That is the difference, yes.

Q. Was any machinery used in either mixing or laying of this concrete that you have described in any of those instances, the blacksmith shop, or at the factory or at the depot?

A. No, there was no machinery used.

Q. How large a job was this one at the depot you speak of?

A. That I only referred to the footings of the walls?

Q. Yes.

A. There was—I don't recall any floor or any great amount of surface, just the footing of the wall.

Q. You did that yourself, I understand?

A. No, I was inspector of it?

Q. Who was the contractor?

A. Smith, Campbell and McLeod.

Q. Smith—

A. Smith, Campbell and McLeod.

Q. Where are they now?

A. I think the firm is out of business; two members of the firm are in Duluth at present.

Q. Which two, and what are their initials?

A. James Smith, and I don't know McLeod's initials.

Q. Who was the architect for the depot building?

A. The resident engineer.

Q. What was his name and what was the company that built the depot?

A. W. M. McDonagle, resident engineer for the Iron Range Railway Company; Duluth and Iron Range.

Q. That depot was at Duluth?

A. Yes.

Q. What year was that?

A. About 1895.

Q. Have you yourself laid any concrete in that way since that time?

A. No, I think not; not that I recall.

Q. What have you been engaged in since 1895; in the different years since that time?

A. I built this excelsior factory at Grantsburg, was there five years, then had charge of a large grain farm one year; I have been here seven years in the timber business and railroading.

REDIRECT EXAMINATION.

Q. Now, Judge Carey asked you if you had laid any concrete in that manner since 1895; I wonder if you quite understood that. I think you stated that you laid the floor of the excelsior factory in 1899, didn't you, the year after the Spanish war?

A. I don't remember when the date was. I

figured the judge was quoting the same date I gave when I built the factory.

MR. CAREY: I will say in explanation I understood the factory was after the depot, whatever date that was.

A. It was, yes.

Q. I didn't know but what he misunderstood you. I took it he inferred you meant any footings for buildings, or sidewalks in that manner, not the floors; I just wanted to explain that, see that it was clear.

A. The year I built the factory—did I say 1899?

Q. You didn't say, I said 1899. You said it was the year after the Spanish war.

A. Yes. I was there five years, the year before that, I think it was two years before, I was with the Iron Range Railroad.

Q. What you mean to be understood is that you haven't laid any of this kind of concrete since you built the excelsior factory—

A. No.

Q. —whatever that date was.

A. I have laid wet concrete, that is, mixed the rock and grout together and had it laid.

RE-CROSS EXAMINATION.

Q. Where have you done that?

A. Built a school house at Scappoose about four years ago.

Q. You mean you in building that school house

mixed the concrete in the usual way by mixing the sand and cement and water together before it was put in place where it was to be finally placed?

A. Yes, I did.

Q. That is the common way of using concrete, as I understand it.

A. It is, at the present time.

Witness excused.

A. C. GILMAN.

Subscribed and sworn to before me this 8th day of November, 1913.

(Notorial Seal) VIVIAN FLEXNER,
Notary Public for Oregon and Commissioner to Take Deposition.

STATE OF OREGON, }
County of Multnomah, } ss.

I, Vivian Flexner, the Notary Public and reporter heretofore appointed in the stipulation between parties to take and report the testimony to be given before me as such Notary Public, do hereby certify that pursuant to such appointment and authority, which is part hereof, I did, on the 6th day of November, 1913, take the testimony of A. C. Gilman, a witness produced on behalf of the defendants herein; that pursuant to the stipulation which is a part hereof I reduced the said testimony of the said witness and the other proceedings given and had at such hearing to accurate shorthand notes, and thereafter transcribed my said shorthand notes into longhand, and that the foregoing 14 typewritten pages hereto attached contain a full, true and impartial longhand transcript of my said shorthand notes so taken at said hearing, and of the whole thereof.

Witness my hand and Notarial Seal at Portland, Oregon, this 8th day of November, 1913.

(Notarial Seal) VIVIAN FLEXNER,
Notary Public for Oregon and Commissioner to Take Deposition.

IN THE DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF OREGON.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation, Complainants, vs. CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation, Defendants.	DECREE No. .....

AT THE MARCH TERM OF THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF OREGON HELD AT THE UNITED STATES COURT ROOM IN THE CITY OF PORTLAND, ON THE 27TH DAY OF APRIL, 1914.

PRESENT—HON. ROBERT S. BEAN, DISTRICT JUDGE.

This cause came on to be heard at the March term of the said court in the year 1914 and was argued by counsel and was continued for advisement until the present time, and thereupon, upon consideration thereof, it was

ORDERED, ADJUDGED and DECREED as follows:

That letters patent No. 819,652 entitled "Pave-

ment and Process of Laying the Same," granted and issued on May 1, 1906, to Walter E. Hassam and Charles K. Pevey jointly; No. 861,650 entitled "Artificial Structure and Process of Making the Same," granted and issued on July 30, 1907, to Hassam Paving Company, and No. 851,625 entitled "Process for Laying Pavement," granted and issued on April 23, 1907, to Hassam Paving Company, referred to in the bill of complaint herein, are good and valid as respects all of the specifications thereof.

That the said Walter E. Hassam was the first and original inventor and discoverer of each and all of the said inventions as described and claimed in the said several patents and the specifications annexed thereto.

That the said inventions and each of them were new and useful inventions that were neither known nor used by others in this country before the invention and discovery thereof by the said Hassam, and which were never patented nor described in any printed publication in this or any foreign country before the invention and discovery thereof by the said Hassam for more than two years before the application for the United States letters patent therefor, and at the time of the several applications for United States letters patent therefor the same had not been in public use or sale in the United States for more than two years and were not patented or caused to be patented either by the said inventor or patentees, or by his or their legal rep-

resentatives or assigns, in any foreign country upon an application filed more than twelve months prior to the filing of the said several applications in this country, nor had the same been abandoned.

That before the infringement complained of in the bill of complaint the Hassam Paving Company, complainant, became and was and still is the sole owner of each of the said patents as alleged in the said bill of complaint, by assignments duly recorded in the patent office of the United States, and the complainant Oregon Hassam Paving Company became and was and still is the sole licensee in the state and district of Oregon under the said Hassam Paving Company, for the use of the said inventions and improvements as specified in the said patents.

That all of the said inventions and improvements described in and claimed by the said three letters patent No. 819,652, No. 861,650 and No. 851,625, are capable of embodiment and conjoint use in one and the same structure, and have been so embodied and conjointly used by the complainants and also by the defendants in the infringements complained of in said bill of complaint.

That the defendants infringed upon the said letters patent and upon the exclusive rights of the complainants under the same, that is to say by making, using and selling pavements and artificial structures embodying the said inventions and improvements patented as aforesaid, as charged in the bill of complaint.

At it is further ORDERED, ADJUDGED and DECREED that the complainants do recover of the defendants the profits, gains and advantages which the said defendants have received or made or which have arisen or accrued to them or either of them by the manufacture, use or sale of the said pavements and artificial structures in violation of the said letters patent since the 2d day of August, 1911, and that the complainants do recover the damages resulting from said infringements.

And it is further ORDERED, ADJUDGED and DECREED that the complainants do recover of the defendants their costs, charges and disbursements in this suit to be taxed.

And it is further ORDERED, ADJUDGED and DECREED that it be referred to WALLACE McCAMANT, the standing master in chancery, his experience in such matters being found by the court a sufficient reason for such appointment, to ascertain, take and state and report to the court, an account of the number of pavements and structures embodying the said inventions and improvements and each thereof described and secured in the said letters patent, made, used or sold by the said defendants, and also the gains, profits and advantages which the said defendants have received or which have arisen or accrued to them or either of them, since the 2d day of August, 1911, from infringing the said exclusive rights of the said complainants by the manufacture, use or sale of the said inventions and improvements in the

said letters patent, and the damages which the complainants have suffered by said infringements.

And it is further ORDERED, ADJUDGED and DECREED that the complainants on such accounting have the right to cause the examination of the officers of the said defendant corporations *ore tenus,* or otherwise, and also the production of the books, vouchers and documents of the said defendants, and that the officers of the said defendant corporations attend for such purpose before the said master from time to time as the said master shall direct.

And it is further ORDERED, ADJUDGED and DECREED that a perpetual injunction be issued in this suit against the said defendants and each of them, restraining them, their agents, clerks, servants and all claiming or holding under or through them or either of them, from making or selling or in way using or disposing of pavements and structures embracing the inventions or improvements described in the said letters patent, pursuant to the prayer of the said bill of complaint.

Jurisdiction is hereby retained for the purpose of making and enforcing any additional order or orders as may be deemed necessary relative to this suit and to enforce compliance with this decree.

R. S. Bean,
United States District Judge.

IN THE DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF OREGON.

IN EQUITY—No. 3818.

HASSAM PAVING COMPANY, a corporation, and OREGON HASSAM PAVING COMPANY, a corporation, Complainants. vs. CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation, Defendants.	PETITION FOR APPEAL.

TO THE HONORABLE JUDGES OF THE DISTRICT COURT OF THE UNITED STATES, FOR THE DISTRICT OF OREGON:

To the above named defendants conceiving themselves aggrieved by the decree and order made, rendered and entered on the 27th day of April, 1914, in the above entitled cause, do hereby appeal from said decree and order to the United States Circuit Court of Appeals for the Ninth Circuit, for the grounds and reasons specified in the assignment of errors filed herewith.

And the said defendants, petitioning appellants, pray that this appeal may be allowed and that a

transcript of the record, proceedings and papers upon which said decree and order was made, July authenticated, may be sent to the United States Circuit Court of Appeals for the Ninth Circuit, conformable to the statute in such cases made and provided.

JESSE STEARNS,
JOHN H. HALL,
Solicitors for Defendants.

Endorsed. Filed May 20, 1914.
A. M. CANNON, Clerk.

IN THE DISTRICT COURT OF THE UNITED STATES

For the District of Oregon.

In Equity, No. 3818.

Hassam Paving Company, a corporation, and Oregon Hassam Paving Company, a corporation, Complainants. vs. Consolidated Contract Company, a corporation, and Pacific Coast Casualty Company, a corporation, Defendants.	ASSIGNMENT OF ERRORS.

To the Honorable Judges of the Circuit Court of the United States for the Ninth Circuit and District of Oregon, in Equity Sitting:

Now comes the above named defendants, and having prayed for an allowance of an appeal from the interlocutory decree rendered and given against them on the 27th day of April, 1914, and entered in said cause, assign for errors in said decree, the following:

First: Said District Court of the United States in and for the District of Oregon, erred in determining and deciding that letters patent No. 819,652 entitled "Pavement and Process of Laying the

Same," granted and issued on May 1, 1906, to Walter E. Hassam and Charles K. Pevey jointly; No. 861,650, entitled "Artificial Structure and Process of Making the Same," granted and issued on July 30, 1907, to Hassam Paving Company; and No. 851,625, entitled "Process for Laying Pavement," granted and issued on April 23, 1907, to Hassam Paving Company, mentioned in the bill of complaint herein, are good and valid in any respect.

Second: That the said District Court erred in determining and deciding that Walter E. Hassam was the first and original inventor and discoverer of each and all of the said alleged inventions as described and claimed in the said several patents, and the specifications annexed thereto.

Third: That the said District Court erred in determining and deciding that the claims and specifications mentioned in said patents, or any of them, were new and useful inventions; that they were neither known nor used by others in this country, before the alleged invention and discovery thereof by the said Walter E. Hassam; and that the said claims and specifications mentioned in the said patents were never patented or described in any printed publication in this or any foreign country before the alleged invention and discovery thereof by the said Hassam, or more than two years before the application for United States letters patent thereof; and that at the time of the several applications for United States letters patent therefor the said claims and specifications had not been in pub-

lic use in the United States for more than two years.

Fourth: That the said District Court erred in not determining and deciding that the said claims and specifications mentioned in the said several patents and each of them, were void for lack of novelty and invention.

Fifth: That the said District Court erred in deciding and determining that said defendants have infringed upon the rights of said complainants claimed under the said three letters patent, No. 819,652, 861,650, and 851,625.

Sixth: Said District Court erred in finding and determining that the complainants are entitled to recover damages from the said defendants by reason of any violation of any rights of the complainants under said letters patent.

Seventh: That the said District Court erred in determining and deciding that the complainants should have a perpetual injunction in this case against the defendants and each of them, restraining them, their agents, clerks, servants and all claiming or holding under or through them or either of them, from making, selling, using or disposing of pavements and structures embracing the alleged inventions or improvements described in the said letters patent.

Eighth: That the said District Court erred in not finding and decreeing for said defendants on the record.

Ninth: That the Findings and Decree of the

said District Court are against the law and the equity of the case.

Wherefore, said defendants pray that the said Order and Decree of April 27th, 1914, be reversed, and that the said District Court of the United States for the District of Oregon be directed to enter an Order and Decree in consonance with law and equity herein; and your petitioner will ever pray.

JESSE STEARNS,
JOHN H. HALL,
Solicitors for Defendants.

Endorsed. Filed May 20, 1914.
A. M. CANNON, Clerk.

IN THE DISTRICT COURT OF THE UNITED STATES

For the District of Oregon

In Equity—No. 3818.

Hassam Paving Company, a corporation, and Oregon Hassam Paving Company, a corporation, Complainants. vs. Consolidated Contract Company, a corporation, and Pacific Coast Casualty Company, a corporation, Defendants.	ORDER ALLOWING APPEAL.

This day came Consolidated Contract Company, a corporation, and Pacific Coast Casualty Company, a corporation, defendants, and presented their petition for an appeal and the assignment of errors accompanying the same, and upon consideration thereof, it is

ORDERED: That the said appeal and claim of appeal be and is hereby allowed to the United States Circuit Court of Appeals for the Ninth Circuit, upon the filing of a bond of in the sum of five hundred and no-100 dollars, with good and sufficient surety to be approved by the court; and in the meantime, until the hearing and determina-

tion of this appeal that the accounting under the order and decree appealed from, be suspended and stayed.

DATED, May 20, 1914.

R. S. Bean, Judge.

Endorsed. Filed May 20, 1914.

A. M. Cannon, Clerk.

IN THE DISTRICT COURT OF THE UNITED STATES

For the District of Oregon.

In Equity—No. 3818.

Hassam Paving Company, a corporation, and Oregon Hassam Paving Company, a corporation, Complainants. vs. Consolidated Contract Company, a corporation, and Pacific Coast Casualty Company, a corporation, Defendants.	BOND ON APPEAL.

KNOW ALL MEN BY THESE PRESENTS, That we, CONSOLIDATED CONTRACT COMPANY, a corporation, and PACIFIC COAST CASUALTY COMPANY, a corporation, appellants, as principals, and NEW ENGLAND CASUALTY COMPANY, of Boston, Massachusetts, as surety, are held and firmly bound unto Hassam Paving Company, a corporation, and Oregon Hassam Paving Comapny, a corporation, complainants, appellees, in the full and just sum of five hundred dollars ($500.00), to be paid unto them, their successors or assigns, to which payment well and truly to be made we ourselves are bound as well as our successors and assigns jointly and severally by these presents.

Sealed with our seals and dated this 22d day of May, 1914.

Whereas, lately in the District Court of the United States for the District of Oregon, in a suit depending in said court as hereinabove first entitled, an Order and Decree was rendered and entered against the above named defendants, the appellants, who, having obtained an appeal therefrom to the United States Circuit Court of Appeals for the Ninth Circuit, and filed a copy of said appeal in the clerk's office, to reverse the aforesaid decree, and a citation has issued directed to the said several appellees citing and admonishing them to be and appear at a session of the United States Circuit Court of Appeals for the Ninth Circuit to be holden at the City of San Francisco in said circuit on the return day of said citation next;

Now, the condition of the above obligation is such that if the said appellants shall prosecute their appeal to effect and answer all damages and costs if they fail to make their plea good, then the above obligation is void; else to remain in full force and effect.

Sealed and delivered in the presence of: J. M. Hiatt, M. A. Imbler.

CONSOLIDATED CONTRACT COMPANY,
By Jesse Stearns, Attorney.
PACIFIC COAST CASUALTY COMPANY,
By Jesse Stearns, Attorney.
PRINCIPALS.

NEW ENGLAND CASUALTY COMPANY,
By Louis Van Orman, its Attorney-in-Fact.
(Corporate Seal.) SURETY.

Attest: C. M. Kirkley, its attorney-in-fact, Portland, Ore.

Countersigned by Seeley & Co., general agents.

Pursuant to order heretofore entered touching said appeal this Bond is presented to me for approval and I hereby approve the same.

R. S. Bean, Judge.

Endorsed. Filed May 22, 1914.

A. M. Cannon,
Clerk U. S. District Court.

CITATION ON APPEAL.

UNITED STATES OF AMERICA,
DISTRICT OF OREGON. } ss.

To Hassam Paving Company, GREETING:

WHEREAS, Consolidated Contract Co. has lately appealed to the UNITED STATES CIRCUIT COURT OF APPEALS for the NINTH CIRCUIT from a decree rendered in the DISTRICT COURT of the UNITED STATES for the District of Oregon, in your favor, and has given the security required by law:

YOU ARE, therefore, hereby, cited and admonished to be and appear before said UNITED STATES CIRCUIT COURT OF APPEALS for the NINTH CIRCUIT, at San Francisco, California, within thirty days from the date hereof, to show cause, if any there be, why the said decree should not be corrected, and speedy justice should not be done to the parties in that behalf.

GIVEN under my hand, at Portland, in said District, this 23d day of May in the year of our Lord, one thousand, nine hundred and fourteen.

R. S. Bean, Judge.

Service accepted this 23d day of May, 1914.

Carey & Kerr,
Attorneys for Plaintiffs.

Endorsed. Filed May 25, 1914.

A. M. Cannon,
Clerk U. S. District Court.

U. S. CIRCUIT COURT OF APPEALS,

For the Ninth Circuit.

Hassam Paving Company, a corporation, and Oregon Hassam Paving Company, a corporation, Complainants. vs. Consolidated Contract Company, a corporation, and Pacific Coast Casualty Company, a corporation, Defendants.	No. 3818. STIPULATION.

IT IS HEREBY STIPULATED AND AGREED by and between the parties in the above entitled suit that the printed pleadings, testimony, and exhibits offered and considered in the court below, shall be a part of the transcript and record on appeal in this cause; and that the deposition of A. C. Gilman taken in the suit in the District Court of Oregon by the above named complainants against Reliance Construction Company and other defendants, shall be a part of the transcript and may be printed in the record on appeal, in this cause; that the decree, petition for appeal, order allowing the appeal, assignment of errors, bond on appeal and this stipulation and order entered hereon, may be printed by appellant; that the above mentioned pleadings, testimony and papers shall constitute

the transcript and record on the appeal in this cause; and that the certificate of the judges and clerk of the District Court of the United States for the District of Oregon as to the transcript and the printed record, be waived.

That the time within which to file transcript and docket the same in the United States Circuit Court of Appeals be, and the same is hereby extended to and including the 28th day of October, 1914; and that the time of the appellant to print and file the record on said appeal be likewise extended to and including said date.

DATED, September 24th, 1914.

LOUIS W. SOUTHGATE and
CAREY & KERR,
Solicitors for Appellees.

JESSE STEARNS and
JOHN H. HALL,
Solicitors for Appellants.

IN THE UNITED STATES CIRCUIT COURT OF APPEALS

For the Ninth Circuit.

Hassam Paving Company, a corporation, and Oregon Hassam Paving Company, a corporation, Appellees, vs. Consolidated Contract Company, a corporation, and Pacific Coast Casualty Company, a corporation, Appellants.	ORDER.

Upon the Stipulation of the parties to the above entitled cause, dated September 24th, 1914, and upon motion of Jesse Stearns of counsel for the appellants, it is

ORDERED: That the printed pleadings, testimony and exhibits offered and considered in the United States District Court for the District of Oregon, shall be a part of the transcript and record on appeal in this cause; and that the deposition of A. C. Gilman taken in the suit in said District Court by the above named complainants against Reliance Construction Company et al. shall be a part of the transcript, and may be printed in the record on appeal in this cause; that the decree, petition for appeal, order allowing the appeal, assignment

of errors, bond on appeal and said Stipulation and this Order may be printed by appellant; and that the above mentioned pleadings, testimony and papers shall constitute the transcript and record on the appeal in this cause; and that the certificate of the judges and clerk of the District Court of the United States for the District of Oregon as to the transcript and the printed record, be waived.

IT IS FURTHER ORDERED: That the time within which to file transcript and docket the same in the United States Circuit Court of Appeals be, and the same is hereby extended to and including the 28th day of October, 1914; and that the time of the appellant to print and file the record on said appeal be likewise extended to and including said date.

DATED, September 26th, 1914.

WM. B. GILBERT, Judge.

No. 2505

In the United States Circuit Court of Appeals

FOR THE NINTH CIRCUIT

HASSAM PAVING COMPANY and
OREGON HASSAM PAVING COMPANY,
Appellees

vs.

CONSOLIDATED CONTRACT COMPANY and
PACIFIC COAST CASUALTY COMPANY,
Appellants

Upon Appeal from the United States District Court for the District of Oregon

Brief of Appellants

JESSE STEARNS,
JOHN H. HALL,
for Appellants

LOUIS W. SOUTHGATE,
CAREY & KERR,
for Appellees

J. R. ROGERS, PRINTER, 90 FIRST ST.

No. 2505

In the United States Circuit Court of Appeals

FOR THE NINTH CIRCUIT

HASSAM PAVING COMPANY and
OREGON HASSAM PAVING COMPANY,
Appellees

vs.

CONSOLIDATED CONTRACT COMPANY and
PACIFIC COAST CASUALTY COMPANY,
Appellants

Upon Appeal from the United States District Court for the District of Oregon

Brief of Appellants

STATEMENT.

This is an infringement suit brought by complainants to restrain defendant Consolidated Contract Company from using a process for the construction of highways claimed to have been invented by one Walter E. Hassam and for which several patents have been issued to him and to his successors.

Defendants by way of defense contend:

First: That there was no novelty and no invention in the process on which complainants claim a patent, the process of the laying of the so called "Hassam" pavement.

Second: That said process had been described in printed publications more than two years prior to the application for the patent.

Third: That a process substantially identical with that of the process claimed by complainants had been used in the construction of public highways and streets more than two years prior to the application for complainants' patents.

Fourth: That complainants were estopped by reason of having granted a license to the City of Portland to use said process in laying pavement, without making any reservation for royalty.

The facts as they appear from the testimony and record are: That in the month of April, 1910, complainants, through their agents, requested the City of Portland, through its Common Council to specify the process used by complainants in the construction of streets and highways under the name of Hassam pavement, in an ordinance passed by the Common Council of the City of Portland, specifying the various kinds of pavements to be used in paving the streets of the City of Portland.

That in the early part of 1911, the City of Portland deemed it advisable to pave Commercial street in the City of Portland and specified the process upon which complainants claim a patent, as the mode of improving said street.

That defendant Consolidated Contract Company was a contractor in the City of Portland and submitted a bid for the improvement of said street, which bid being accepted, it proceeded to construct said street in accordance with the plans and specifications, which for the purposes of this case are as follows:

"Section 28. The roadway shall be graded the full width of the roadway down to subgrade as given by the City Engineer. Said subgrade shall be six (6) inches below the finished surface of the street.

Care must be taken to preserve the proper crown. All soft or springy places not affording a firm foundation shall be dug out and refilled with good earth, gravel or macadam, well rammed in place.

The entire roadbed shall be thoroughly rolled and compacted with a road roller weighing not less than ten tons, to the satisfaction of the City Enginneer. Such rolling shall be completed in sections of at least one block and shall be tested and accepted by the City Engineer before any material for the pavement is placed thereon.

Rolling shall be continued until the street is rolled to the satisfaction of the City Engineer.

The thickness of pavement shall not be less than six (6) inches from subgrade to the finished grade of street.

Upon the finished subgrade clean, broken rock, ninety per cent of amount varying in size from two and one-half (2½) inches to one and one-half (1½) inches, shall be spread to a sufficient depth to bring the surface after rolling to the proper finished grade of the street, which shall be six (6) inches above subgrade.

This rock shall then be thoroughly compacted by rolling with a road roller, giving a compression of not less than 250 pounds per inch width of roller, and shall be firmly bedded, and the voids reduced to a minimum, and surface shall conform to grade and contour of the street. Such portions of pavement as it may not be possible to roll shall be thoroughly compressed by tamping.

The voids in the rock shall then be thoroughly filled with a grout consisting of one part of Portland cement to two parts of sand. This grout shall be sufficiently thin to flow freely, and shall be thoroughly and continuously mixed and poured upon the rock until all the voids are filled and the grout flushes to the surface under the rolling or compression, which shall immediately follow the grouting and shall be continued until no further compacting results.

Upon the surface of the pavement thus prepared shall be placed a very thin layer of peastone, which shall be thoroughly spread and rolled or compressed evenly and smoothly over the entire surface. The peastone layer shall have just sufficient thickness to insure the complete filling of the voids in the pavement surface. Rolling shall continue until the grout flushes to the surface."

Complainants then instituted this suit, claiming that the process so prescribed was patented by their predecessors in interest and duly conveyed to them, and that as such patentees they have the sole and exclusive right to lay the class of pavement specified in said plans and specifications.

From the decree in favor of complainants the defendants have taken this appeal.

ASSIGNMENT OF ERRORS.

The appellants, assign for errors in said decree the following:

First: Said District Court of the United States in and for the District of Oregon, erred in determining and deciding that letters patent No. 819,652 entitled "Pavement and Process of Laying the Same," granted and issued on May 1, 1906, to Walter E. Hassam and Charles K. Peavey jointly; No. 861,650, entitled "Artificial Structure and Process of Making the Same," granted and issued on July 30, 1907, to Hassam Paving Company; and No. 851,625, entitled "Process for Laying Pavement," granted and issued on April 23, 1907, to Hassam Paving Company, mentioned in the bill of complaint herein, are good and valid in any respect.

Second: That the said District Court erred in determining and deciding that Walter E. Hassam was the first and original inventor and discoverer of each and all of the said alleged inventions as described and claimed in the said several patents, and the specifications annexed thereto.

Third: That the said District Court erred in determining and deciding that the claims and specifications mentioned in said patents, or any of them, were new and useful inventions; that they were neither known nor used by others in this country, before the alleged invention and discovery thereof by the said Walter E. Hassam; and that the said claims and specifications mentioned in the said patents were never patented or described in any printed publication in this or any foreign country before the alleged invention and discovery thereof by the said Hassam, or more than two years before the application for United States letters patent thereof; and that at the time of the several applica-

tions for United States letters patent therefor the said claims and specifications had not been in public use in the United States for more than two years.

Fourth: That the said District Court erred in not determining and deciding that the said claims and specifications mentioned in the said several patents and each of them were void for lack of novelty and invention.

Fifth: That the said District Court erred in deciding and determining that said defendants have infringed upon the rights of said complainants claimed under the said three letters patent, No. 819,652, 861,650 and 851,625.

Sixth: Said District Court erred in finding and determining that the complainants are entitled to recover damages from the said defendants by reason of any violation of any rights of the complainants under said letters patent.

Seventh: That the said District Court erred in determining and deciding that the complainants should have a perpetual injunction in this case against the defendants and each of them, restraining them, their agents, clerks, servants and all claiming or holding under or through them or either of them, from making, selling, using or disposing of pavements and structures embracing the alleged inventions or improvements described in the said letters patent.

Eighth: That the said District Court erred in not finding and decreeing for said defendants on the record.

Ninth: That the Findings and Decree of the said District Court are against the law and the equity of the case.

Defendants contend that complainants have no valid patent to said process for the reason that every step and every method employed in the laying or construction of said pavement had been used singly and as a whole, and was known generally to persons who were engaged in that business. That there was nothing new or novel that entered into the construction of the pavement, nothing that called forth the inventive genius of man, and nothing except that which would suggest itself to any ordinarily skilled workman, which would differentiate it from the processes that had been in use for many years. That the combination of the old and well known processes by complainants did not produce a new result.

That complainants' patents are based upon nothing more nor less than the well known process of making a macadam road, and grouting it with Portland cement and sand.

POINTS AND AUTHORITIES.

I.

A patent of a device or process, the result of mechanical skill and not the product of inventive genius, is void.

Lord & Burnham vs. Payne, 190 Fed. 172-178.

Phillips vs. Detroit, 111 U. S. 604, 607.

Atlantic Works vs. Brady, 107 U. S. 192-199.

Market Street Ry. Co. vs. Rowley, 155 U. S. 621-629.

Specialty Mfg. Co. vs. Fenton Mfg. Co., 174 U. S. 492, 497.

Van Camp vs. Maryland Pavement Co., 34 Fed. 740, 743.

II.

A combination of old and known devices or processes which does not produce a new and useful result is not invention.

Tubelt Co. vs. Friedman, 158 Fed. 430-439.

Eq. Asphalt Maintenance Co. vs. Parker-Wash. Co., 197 Fed. 920.

Turner vs. Moore, 211 Fed. 466.

Pickering vs. McCulloch, 104 U. S. 310.

Penn R. R. Co. vs. Locomotive Truck Co., 110 U. S. 490.

Torrey vs. Hancock (C. C. A.), 184 Fed. 61.

Richards vs. Chase Elevator Co., 158 U. S. 299-302.

III.

The substitution of equivalents or of one material for another in a device or process to produce the same or even a better result is not invention, and will not sustain a patent.

Hotchkiss vs. Greenwood, 11 Howard 248-265.

Hicks vs. Kelsey, 18 Wall. 670-673.

Smith vs. Nichols, 21 Wall. 112-119.

Brown vs. Piper, 91 U. S. 37-41.

Brown vs. Dist. of Columbia, 130 U. S. 87-99.

IV.

Pleading and proof that the device or process patented had been in use, or described in some printed publication prior to the application for the patent, will defeat a suit for its infringement.

Coffin vs. Ogden, 18 Wall. 120-124.
Cohn vs. U. S. Corset Co., 93 U. S. 366.
Downton vs. Yeager Milling Co., 108 U. S. 466.
Stow vs. Chicago, 104 U. S. 547-551.
Egbert vs. Lippman, 104 U. S. 333-336.
Imperial Brass Mfg. Co. vs. Nelson, 194 Fed. 165.

V.

A patentee is conclusively presumed to know the prior state of the art.

Mast Foos & Co. vs. Stover Mfg. Co., 177 U. S. 485-493.
Crompton vs. Knowles, 7 Fed. 199-203.
Daylight Mfg. Co. vs. Am. Prismatic Glass Mfg. Co., 142 Fed. 454-456.
Voigtmann vs. Weis & Ridge Cornice Co. (C. C. A.), 148 Fed. 848-851.

VI.

"Paper Patents" and abandoned experiments fully disclosing the patented device or process will defeat patentees claim of novelty and invention.

Gayler vs. Wilder, 10 How. 477-498.
National Chemical & Fertilizer Co. vs. Swift & Co. (C. C. A.), 104 Fed. 87-91.

Westinghouse Air Brake Co. vs. Christiansensen Eng. Co., 128 Fed. 437-442.

Sanders vs. Hancock, 128 Fed. 424-433 (C. C. A.)

Van Epps vs. United Box Board & Paper Co. (C. C. A.), 143 Fed. 869-874.

VII.

Commercial use and exploitation of a patented article is of no value when the question of validity is free from doubt.

N. Y. Belting & P. Co. vs. Sierer, 149 Fed. 756-767.

Hyde vs. Minerals Separation, 214 Fed. 100-107-8.

I.

That under the statute a patent must be granted only upon the result of invention and not of mechanical skill is exemplified by the following decisions:

Section 4886 U. S. Revised Statutes, is as follows:

"Any person who has invented or discovered any new and useful art, machine, manufacture or composition of matter, or any new and useful improvements thereof, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his application and not in public use or on sale in this country for more than two years

prior to his application unless the same is proved to have been abandoned, may, upon the payment of the fees required by law, and other due proceeding had, obtain a patent therefor."

In *Atlantic Works vs. Brady,* 107 U. S. 192, at page 199, the Court says:

"The process of development in manufactures creates a constant demand for new appliances, which the skill of ordinary head-workmen and engineers is generally adequate to devise, and which, indeed, are the natural and proper outgrowth of such development. Each step forward prepares the way for the next, and each is usually taken by spontaneous trials and attempts in a hundred different places. To grant to a single party a monopoly of every slight advance made, except where the exercise of invention, somewhat above ordinary mechanical or engineering skill, is distinctly shown, is unjust in principle and injurious in its consequences.

The design of the patent laws is to reward those who make some substantial discovery or invention, which adds to our knowledge and makes a step in advance in the useful arts. Such inventors are worthy of all favor. It was never the object of those laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures. Such an indiscriminate creation of exclusive privileges tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers who make it their business to watch the advancing wave of improvement, and gather its foam in the form of patentable monopolies, which enable them to lay a heavy tax upon the industry of the country, without contributing anything to the real advancement of the arts. It embarrasses the

honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to lawsuits and vexatious accounts for profits made in good faith."

Phillips vs. Detroit, 111 U. S. 604.

This was a suit to restrain the City of Detroit from infringing letters-patent granted to complainant for a useful improvement in street and other highway pavement. The invention claimed was a wooden pavement, composed of blocks of any desired wood cut from the trunks or branches of trees or saplings, in any desired length, in their natural form, the bark only being removed, placed with the fibres vertical upon a bed of broken stone, and gravel or sand, or either of them, the spaces between the blocks being filled with gravel or sand and the whole made compact by rolling or ramming or other proper methods. The Court, by Mr. Justice Woods, says at page 606:

"The only thing left for the patent to cover is the bringing together of these three old and well known elements in the construction of a pavement—namely, the wooden blocks, the foundation, and the filling.

In passing upon the novelty of the alleged improvement covered by this patent, we are permitted to consider matters of common knowledge or things in common use." (Citing Brown vs. Piper, 91 U. S. 37 and other cases.) "We therefore take into consideration that fact that the common and well known method of constructing pavements in use long before the date of the Phillips patent, was to prepare a foundation or bed of gravel or sand, place the blocks, boulders or bricks of which the pavement was to be made upon this bed and fill the spaces

between them with sand or gravel, or both mixed. Familiar instances of pavements thus made are the cobble-stone pavements usually laid in streets, and the brick pavements usually laid upon sidewalks. This is the method pointed out in the specifications of the Phillips patent. It is conceded in the disclaimer embodied in the specification that the use of wooden blocks like those described in the specifications is not new, and the evidence shows that such blocks, set vertically, had long been employed in the construction of pavements. The improvements described in the appellant's patent consists, therefore, in simply taking a material well known and long used in the making of pavements, to-wit, wooden blocks set vertically, and with them constructing a pavement in a method well known and long used. It is plain, therefore, that the improvement described in the patent was within the mental reach of any one skilled in the art to which the patent relates, and did not require invention to devise it, but only the use of ordinary judgment and mechanical skill. It involves merely the skill of the workman and not the genius of the inventor."

Market Street Railway Co. vs. Rowley, 155 U. S. 621.

This patent related to oil feed, and at page 629 the Court said:

"The case is obviously within the principle, so often declared, that a mere carrying forward of the original thought, a change only in form, proportions, or degree, doing the same thing in the same way by substantially the same means, with better results, is not such an invention as will sustain a patent." Citing Roberts vs. Ryer, 91 U. S. 150; Belden Mfg. Co. vs Challenge Corn Planter Co., 152 U. S. 100.

Lord & Burnham Co. vs. Payne, 190 Fed. 172-178.

"Invention is not the offspring of mere mechancial skill, no matter how highly developed it may be. And, while it may be said to be the product of the intellect as against mere handiness in the use of tools, it is not every new mental conception in a useful art, which marks an advance in such art, that steps the mechanic into an inventor under our law. I cannot subscribe to the doctrine that all mechanical skill does not require thought or that thinking out a mechanical problem to a satisfactory solution necessarily involves the exercise of the inventive faculty. A skilled mechanic can produce devices that are new and useful, but under the patent laws, unless they are also inventions, they are not patentable. Neither the constitutional provision nor the patent statute is intended to give a monopoly for a mere mechanical device, no matter how novel or useful it may be. It must be inventively new and useful. To be entitled to a monopoly, the patentee must show that his device is the mechanical embodiment of a new mental conception, the result of mental explorations which carries him beyond the boundary lines of the field or scope of ordinary mechanical or engineering skill."

Specialty Mfg. Co. vs. Fenton Mfg. Co. 174 U. S. 492.

This suit was in relation to a patent involving roller book shelves, and Mr. Justice Brown delivering the opinion of the Court, at page 497 says:

"Comparing these several devices with the patent in suit, it is manifest that every element of the combination, described in the first and second claims, is found in one or the other of such devices. * * * Putting the patent in its most favorable light, it is

very little, if anything, more than an aggregation of prior well known devices, each constituent of which aggregation performs its own appropriate function in the old way. Where a combination of old devices produces a new result such combination is doubtless patentable, but where the combination is not only of old elements, but of old results, and no new function is evolved from such combination, it falls within the rulings of this court." (Citing many cases.) "Hoffman may have succeeded in producing a shelf more convenient and more salable than any which preceded it, but he has done it principally, if not wholly, by the exercise of mechanical skill."

In *Van Camp vs. Maryland Pavement Co.,* 34 Fed. 740, the Court says at page 743:

"Complainant's counsel, however urges that the patent should be construed as claiming the invention, not only of a process, but also as claiming a new combination of matter; that is to say, a new paving concrete not before discovered. It is difficult to see how this contention can be supported, either as a construction of the language of the patent, or, if it could be shown to be claimed in the patent, how it could be maintained that the process there described results in a new product. The patent does not anywhere use words which can be construed to mean that the patentee has discovered a new substance for use in pavements, or that he has discovered a new paving material. The patentee simply and by apt and appropriate words claims that he has invented an improvement in concrete pavements. As before shown, concrete pavements made of the same materials variously compounded were old and in common use. The result of his combination was a material not different in anywise from former combinations, except that it contained a little more or less of some of the same ingredients mechanically

combined, and differing from others only as the proportions of the ingredients differed. When such a mechanically combined material is old and in common use, and has already been the subject of numerous patented improvements both as to the proportions of the ingredients, the processes of manufacturing, and methods of laying the pavement made of it, to say that a person who has merely altered the proportions of the ingredients or the process of combining them has discovered a new composition of matter in the sense of the patent law, is to trifle with language. To be a new combination of matter the product must have some distinctly new property, or be applicable to some new use."

II.

A combination of old and known devices or processes which does not produce a new and useful result is not invention and therefore not patentable.

In the case of *Tubelt Company vs. Friedman,* 158 Fed. at p. 439, Judge Ray used the following language:

"It will not do to find patentable invention in a device or structure where all its elements are found in the prior art, and all the alleged inventor does to produce it is to take one of the prior patented devices, and leave out one of its elements and substitute in place thereof a well known equivalent taken from another device of the same kind where it was used for the same purpose, operated in the same way and produced the same results as is required in its new location, and the sole result of the substitution is that the substituted element operates or works a little better than did the displaced one, and thereby the operation of the alleged new struc-

ture is somewhat improved. This is improvement but not invention. It may be a successful experiment, but there is no novelty." Citing many cases.

See also *Equitable Asphalt Maintenance Co. vs. Parker-Washington Co.,* 197 Fed. 920.

Turner vs. Moore, 211 Fed. 466-469.

Pickering vs. McCullough, 104 U. S. 310.

"A combination of old elements is not patentable unless they all so enter into it as that each qualifies every other. It must either form a new machine of distinct character and function, or produce a result which is not the mere aggregate of separate contributions, but is due to the joint and co-operating action of all the elements."

Mr. Justice Gray in the case of *Pennsylvania Railroad Co. vs. Locomotive Truck Company,* 110 U. S. 490, says:

"it is settled by many decisions of this Court * * * that the application of an old process or machine to a similar or analagous subject with no change in the manner of application and no result substantially distinct in its nature, will not sustain a patent even if the new form of result has not before been contemplated."

Torrey vs. Hancock (C. C. A.), 184 Fed. 61.

"Changes in degree, proportion or symmetry in a machine where it does the same thing in the same old way and by substantially the same means, although it may produce better results, does not amount to patentable invention."

Richards vs. Chase Elevator Co., 158 U. S. 299, at p. 302 the Court says: "Unless the combination accomplishes some new result the combination of

elements does not make it patentable. So long as each element performs some old and well known function, the result is not a patentable combination, but an aggregation of elements."

III.

The substitution of equivalents or of one material for another in a device or process to produce the same or even a better result is not invention and will not sustain a patent.

Hotchkiss vs. Greenwood, 11 Howard 248.

The patent in that case was for making door knobs of clay or porcelain with a cavity in the knob in which the screw or shank was inserted, being largest at the bottom and in the form of dovetail, or wedge reversed, and metal poured in in a fused state and fastened. Having been shown that clay or porcelain had been used for the same purpose, and the shank or spindle had before been in use, it was held that the patent was void for want of novelty. The Court says at page 265:

"The knob is not new, nor the metallic shank and spindle, nor the dovetail form of the cavity in the knob, nor the means by which the metallic shank is securely fastened therein. All these were well known, and in common use, and the only thing new is the substitution of a knob of a different material from that heretofore used in connection with this arrangement.

Now it may very well be, that, by connecting the clay or porcelain knob with the metallic shank in this well known mode, an article is produced better and cheaper than in the case of the metallic or wood knob; but this does not result from any new mechan-

ical device or contrivance, but from the fact that the material of which the knob is composed happens to be better adapted to the purpose for which it is made. The improvement consists in the superiority of the material, and which is not new, over that previously employed in making the knob.

But this, of itself, can never be the subject of a patent. No one will pretend that a machine made, in whole or in part, of materials better adapted to the purpose for which it is used than the materials of which the old one is constructed, and for that reason better and cheaper, can be distinguished from the old one, or, in the sense of the patent law, can entitle the manufacturer to a patent.

The difference is formal, and destitute of ingenuity or invention. It may afford evidence of judgment and skill in the selection and adaptation of the materials in the manufacture of the instrument for the purposes intended, but nothing more."

The Court then cites the case of a button, where the founation was wood and the improvement consisted of covering the face with tin, and the patent was held void because a button was produced which had been previously used, made in precisely the same way except the foundation was bone, and the Court held in both cases that the improvement was the work of a skilled mechanic and not that of an inventor.

Hicks vs. Kelsey, 18 Wallace, 670.

"The mere change in an instrument or machine of one material into another—as of wood, or of wood strengthened with iron into iron alone—is not "invention" in the sense of the Patent Acts, and therefore is not the subject of a patent."

Mr. Justice Bradley delivered the opinion of the Court, and said at page 673 (the patent in question being upon a wagon reach):

"The question is whether the mere change of material—making the curve of iron instead of wood and iron—was a sufficient change to constitute invention; the purpose being the same, the means of accomplishing it being the same, and the form of the reach and mode of operation being the same.

It is certainly difficult to bring the case within any recognized rule of novelty by which the patent can be sustained. The use of one material instead of another in constructing a known machine is, in most cases, so obviously a matter of mere mechanical judgment, and not of invention, that it cannot be called an invention, unless some new and useful result, an increase of efficiency, or a decided saving in the operation, is clearly attained. Some evidence was given to show that the wagon-reach of the plaintiff is a better reach, requiring less repair, and having greater solidity than the wooden reach. But it is not sufficient to bring the case out of the category of more or less excellence of construction. The machine is the same. Axe-helves made of hickory may be more durable and more cheap in the end than those made of beech or pine, but the first application of hickory to the purpose would not be, therefore, patentable."

It was held that the invention was void for a lack of novelty in the alleged invention.

Smith vs. Nichols, 21 Wallace 112.

This was a patent for weaving elastic web. In discussing the want of novelty in the patent, the Court says at page 119:

"But a mere carrying forward a new or more

extended application of the original thought, a change only in form, proportions, or degree, the substitution of equivalents, doing substantially the same thing in the same way by substantially the same means with better results, is not such invention as will sustain a patent. These rules apply alike, whether what preceded was covered by a patent or rested only in public knowledge and use. In neither case can there be an invasion of such domain and an appropriation of anything found there. In one case everything belongs to the prior patentee, in the other, to the public at large."

And it was held that all the particulars claimed by the complainant, if conceded to be his, are within the category of degree, and that the patent was void.

Brown vs. Piper, 91 U. S. 37.

HELD: "The application by the patentee of an old process to a new subject, without any exercise of the inventive faculty, and without the development of any idea which can be deemed new or original in the sense of the patent laws, is not the subject of a patent."

This was a patent for preserving fish and other articles in a close chamber by means of a freezing mixture, having no contact with the atmosphere of the preserving chamber. The Court held that this idea had been anticipated by the use of the ice cream freezer.

After taking judical notice that air is an agent of decay and that if it be excluded putrefaction ceases, and that a low degree of cold prevents the decay of animal matter, and referring to various

scientific books, the Court, at page 41, in reply to the claim that the process never had been applied to the preservation of fish and meats, says:

"The answer is, that this was simply the application by the patentee of an old process to a new subject, without any exercise of inventive faculty, and without the development of any idea which can be deemed new or original in the sense of the patent law. The thing was within the circle of what was well known before, and belonged to the public. No one could lawfully appropriate it to himself and exclude others from using it in any usual way for any purpose to which it may be desired to apply it. This is fatal to the patent."

Brown vs. District of Columbia, 130 U. S. 87.

This was a suit relating to wooden pavement, composed of blocks being wedge shape and laid on their larger ends to form grooves to receive concrete or other suitable filling. Referring to Lindsay's patent, Chief Justice Fuller, delivering the opinion of the Court, says at page 99:

"The blocks of the Lindsay patent are of the same shape as those of Cowing, but are of stone, while the latter are of wood, but this was nothing more than the substitution of one material for another without involving a new mode of construction, or developing anything substantially new in the resulting pavement."

Citing cases. The patents were held void for want of patentable novelty. It will be noted that the filling under Lindsay's patent was small stones, fine gravel, or grout. (Page 100.)

IV.

Pleading and proof that the process patented had been in use or described in some printed publication prior to the application for patent will defeat a suit for its infringement.

Coffin vs. Ogden, 18 Wall. 120.

The court says, p. 124: The prior knowledge and use by a single person is sufficient.

Cohn vs. U. S. Corset Co., 93 U. S. 366.

"To defeat a party suing for an infringement of letters patent, it is sufficient to plead and prove that prior to his supposed invention or discovery, the thing patented to him had been patented or adequately described in some printed publication. A sufficiently certain and clear description of the thing patented is required, not of the steps necessarily antecedent to its production."

See also *Downton vs. Yeager Milling Co.,* 108 U. S. 466, wherein it was held that a prior publication in a German newspaper substantially describing the process for separating bran and middlings from flour, and being substantially the same process claimed by the patentee in that case, was sufficient to defeat the patent.

In the case of *Stow vs. Chicago,* 104 U. S. 547, on page 551 of the opinion, Mr. Justice Woods uses the following language:

"The evidence is distinct and clear that the invention thus defined was anticipated by the pavement which J. K. Thompson, City Superintendent, laid in the year 1864, at the intersection of North State and Kinzie Streets in the City of Chicago. This piece of pavement was made of wooden blocks,

six inches square, set in rows, on an earth foundation, with spaces between the rows, and the spaces were filled with fine gravel and the gravel rammed. It was put down by him as an experiment. It proved successful and was in use until the great fire in Chicago in 1871. * * * We have here every part of the invention described in the letters patent under consideration, except that it does not appear that the gravel in the spaces between the rows was so compactly rammed as to drive it below the under surface of the pavement into the earth foundation. All, therefore, that is left for the appellant's patent of 1872 to cover is the giving of a few more strokes of the rammer, whereby the gravel filling may be forced into the earth foundation of the pavement. Can this be called invention? * * * Therefore, without noticing the other defenses, we declare our opinion to be that he is not entitled to any relief against the City upon either of the patents on which his demand for relief is now based. His case as presented here has no ground to stand on."

Egbert vs. Lippman, 104 U. S. 333.

Mr. Justice Woods says at p. 336:

"We observe, in the first place, that to constitute the public use of an invention it is not necessary that more than one of the patented articles should be publicly used. The use of a great number may tend to strengthen the proof, but one well-defined case of such use is just as effectual to annul the patent, as many."

Imperial Brass Mfg. Co. vs. Nelson, 194 Fed. 165.

"Knowledge by others of a device before its alleged invention by an applicant for a patent in a form adapted to practical use constitutes an antici-

pation and renders it unpatentable under Revised Statute 4886 (U. S. Comp. Stat. 1901, p. 3382), although it was not used, and such knowledge need not have been more than two years before the date of the application."

V.

A patentee is conclusively presumed to know the prior state of the art.

In Mast, Foos & Co. v. Stover Mfg. Co., 177 U. S. 485, after discussing the patent in connection with devices theretofore in use, the Court says at page 493:

"Having all these various devices before him, and whatever the facts may have been, he is chargeable with a knowledge of all pre-existing devices, did it involve an exercise of the inventive faculty to employ this same combination in a wind mill for the purpose of converting a rotary in a reciprocating motion? We are of the opinion that it did not. * * * Martin, therefore, discovered no new function, and he created no new situation, except in the limited sense that he first applied an internal gearing to the old Mast-Foos mill, which was practicaly identical with the Martin patent, except in the use of an internal gearing. He invented no new device; he used it for no new purpose; he applied it to no new machine. All he did was to apply it to a new purpose in a machine where it had not before been used *for that purpose.* The result may have added to the efficiency and popularity of the earlier device, although to what extent is open to very considerable doubt. In our opinion this transfer does not rise to the dignity of invention. We repeat what we said in Potts vs. Creager, 155 U. S. 597-608, 'if the new use be so nearly analogous to the former one

that the applicability of the device to its new use would occur to a person of ordinary mechanical skill, it is only a case of double use.' The line between invention and mechanical skill is often an exceedingly difficult one to draw; but in view of the state of the art as heretofore shown, we cannot say that the application of this old device to a use which was only new in the particular machine to which it was applied, was anything more than would have been suggested to an intelligent mechanic, who had before him the patents to which we have called attention. While it is entirely true that the fact that this change had not occurred to any mechanic familiar with windmills is evidence of something more than mechanical skill in the person who did discover it, it is probable that no one of these was fully aware of the state of the art and the prior devices; but, as before stated, in determining the question of invention we must presume the patentee was fully informed of everything which preceded him, whether such were the actual fact or not. * * * But the statute (Sec. 4886) is inexorable. It denies the patent, if the device were known or used by others in this country before his invention. Congress having created the monopoly, may put such limitations upon it as it pleases."

Crompton vs. Knowles, 7 Fed. 199.

Judge Lowell says at page 203:

"It is a presumption of law that all mechanics interested in upholding or defeating a patent were fully acquainted with the state of their art when they took out their patent, or when they built their machine. This presumption is founded upon the policy like that which imputes to all persons charged with crime a knowledge of the law. It is necessary to the safe administration of justice. Each party

may then be assumed to have borrowed from the other whatever was actually first invented and used by that other."

Daylight Glass Mfg. Co. vs. American Prismatic Light Company, 142 Fed. 454.

The Court says at page 456:

"In considering the question of the patentable character of the machine in question, we must not be misled by the fact that its use has been attended with commercial success in the way of a large, better and cheaper product, for in the steady advance incident to progress in manufacturing, many no-patentable processes and methods have proved most original and exceedingly profitable, and it must be remembered that everything novel and useful is not therefore necessarily patentable. In taking up the question of the patentability of Cummings' roller table, we must charge him with knowledge of all that preceded him in the art, for 'it is a presumption of law that all mechanics interested in upholding or defeating a patent were fully acquainted with the state of the art when they took out their patent, or when they built their machine. * * * Each party may then be assumed to have borrowed from the other whatever was actually first invented and used by the other.' "

See

Peters vs. Active Mfg. Co., 130 U. S. 626.

Voigtmann vs. Weis & Ridge Cornice Co., 148 Fed. 848.

(Circuit Court of Appeals, 8th Circuit.)

The patent was intended to cover any fire-proof window. After discussing the various devices, and showing the use of the different elements of the dif-

ferent devices, but that no device employed all the different elements, the Court says at page 851:

"The foregoing phases of the art were certainly 'known or used by others in this country,' within the meaning of Section 4886, Rev. St., before Voightmann's supposed invention or discovery, and, whatever the fact may be, he is chargeable with a knowledge of all pre-existing patents and devices." Citing Mast, Foos & Co., 177 U. S. 493.

VI.

Paper patents and abandoned experiments fully disclosing the patented device or process, will defeat patentee's claim of novelty and invention.

Gayler vs. Wilder, 10 How. 477 (p. 498):

"We do not understand the Circuit Court to have said that the omission of Conner to try the value of his safe by proper tests, would deprive it of its priority; nor his omission to bring it into public use. He might have omitted both, and also abandoned its use, and been ignorant of the extent of its value, yet if it was the same with Fitzgerald's, the latter would not upon such grounds be entitled to a patent."

Nat. Chem. & Fert. Co. vs. Swift & Co., (C. C. A.), 104 Fed. 87-91.

"The contention that these prior patents must be treated as failures—as mere paper patents of no practicable value is untenable. The very fact of a grant of the patent for the process described is some evidence of its operativeness as well as of its utility when introduced by way of anticipation."

Westinghouse Air Brake Co. vs. Christensen Engineering Co., 128 Fed. 437-442:

"It may be assumed that Boyden of 1883 and Holleman were mere paper patents, not capable of successful practical operation. But this does not defeat their relevancy as limitations upon the scope of the patent in suit, provided they sufficiently embody the elements and disclose the principle of operation of said patent." Pickering vs. Lomax, 104 U. S. 310.

Sanders vs. Hancock, 128 Fed. 424 (C. C. A. Sixth Circuit), p. 433:

"We have no doubt that Hardy had no knowledge of any of these former patents, for they had not been much extended in use or public notice; but the consequence of their existence no less affects his claim of novelty than if he had known all about them, notwithstanding their obscurity."

Van Epps vs. United Box Board & Paper Co. (C. C. A. Second Circuit), 143 Fed. 869-874.

Speaking of the rule frequently invoked in the case of mere paper patents, the Court said:

"Where such patents, or the machines constructed under them, embody the principle covered by a later patent; the mere fact that they are not capable of successful practical working because of objections as to the minor matters of detail in construction will not deprive them of their effect as defenses where they sufficiently disclose the invention claimed in the later patent."

VII.

Commercial use and exploitation of a patented article is of no value whatever where the question of invention is free from doubt.

New York Belting & P. Co. vs. Sierer, 149 Fed. 767.

"The commercial success of a patented thing shows its utility, but does not establish its patentability. A thing may be new and of great utility, but not patentable. It must possess patentable novelty as well. Patentable invention must be disclosed. And here comes in the prior art. Many new and useful contrivances go into use without the intervention of a patent. If the prior art discloses the claimed invention, and shows it to be old, it is immaterial that no one has used it. If all the elements are old, and the working or operation of the combination is old, and the result is old, how can one claim invention by putting it on the market, and building up a large trade in the article? Its utility and commercial value may not have been demonstrated, but to demonstrate these is not invention, nor is it invention to merely substitute a tile of great resilience, elasticity, and durability in place of a stone or brick or iron tile, simply because it is more durable and useful."

Hyde vs. Minerals Separation, 214 Fed. 100.

In this case Judge Gilbert well states the rule at p. 107, which is peculiarly applicable in the case at bar: "The decision of the Court below appears to have been largely influenced by the consideration that the appellees' patent had gone into extensive and successful use.

"The fact that a patented device or process has gone into extensive and successful use is often of no

value in determining the question of invention and patentability. It is referred to for the purpose of turning the scales in cases of grave doubt. It is of no value whatever where the question of the invention or patentability is free from doubt, and in any case its value depends largely upon the causes which produced it. It is often due to business ability in manufacturing, exploiting, and advertising, and to the fact that prior conditions have not stimulated development." * * * In Olin vs. Timken, 155 U. S. 141-155, it is said: "While the patented article may have been popular and met with large sales, that fact is not important when the invention is without patentable novelty."

And finally, we think the Court, in the case last cited has well summed up the law applicable to the case at bar, at page 109 of the Opinion, in which it is said:

"We hold that to sustain the appellees' patent would be to give to the owners thereof a monopoly of that which others had discovered. What they claim to be the new and useful feature of their invention, as stated by their counsel, is, 'agitating the mixture to cause the oily coated material to form a froth.' As we have seen, that feature was clearly anticipated by the prior art, and when the elements of the appellees' claims are read one by one, it will be found that each step in their process is fully described in more than one of the patents of the prior art, with the single exception of the reduced quantity of oil which they use."

The only step which appellees claim in their patented process was that the rolling after the grout was applied caused an agitation of the mass which expelled the air, and caused the grout to fill the

voids; but the tamping described by Gilman, and by the other witnesses for the defendant and by the complainants' own witnesses, shows that this was not new—that the rolling only accomplished what was done by tamping; and, therefore, there was nothing new in the process of appellees under which they have earned or become entitled to the monopoly which they claim.

VIII.

RULE OF CONSTRUCTION.

Sackett vs. Smith, 42 Fed. 846.

Judge Cox says at page 853:

"Where the patent relates only to a progressive step in a series of improvements, the tendency of modern decisions is more than ever towards a strict construction of claims and a finding of non-infringement in doubtful cases." Citing many cases.

Lauman vs. Urschel White Lime Co., 136 Fed. 190.

A patent far slacking lime was held void for lack of patentable invention. A slight difference in process which accomplishes the same result is not invention.

Roberts vs. Bennett, 136 Fed. 193.

"Where a patent is void upon its face, or shown to have been anticipated by prior patents, or the presumption of novelty arising from the grant of a patent is overcome by proof of the prior art and by facts of which the Court may take judicial notice, it is the duty of the Court to so instruct the jury in an action for infringement."

Standard Machine Co. vs. Rambo and Regar, 188 Fed. 323, 3rd Circuit Court of Appeals, Judge Lanning said at page 325:

"While the policy of our law is to encourage inventions, we should in this age of rapid and marvelous improvements in mechanical appliances, when dealing with patents, be careful to distinguish between those improvements which do and which do not involve real inventive genius. The mechanical art should not be burdened with patents for those improvements which involve only the skill of the mechanic."

To the same effect—

Gen. El. Co. vs. Winona Interurban Ry. Co., 188 Fed. 77 (Grosscup, 7th Cir. Court App.)

Duncan vs. Cincinnati Butchers' Supply Co., 171 Fed. 660 (Severens, 6th Cir. Court App.)

Mahn vs. Harwood, 112 U. S. 354-358.

"In cases of patents for inventions a valid defense not given by the statute often arises where the question is whether the thing patented amounts to a patentable invention."

J. J. Warren Co. vs. Rosenblatt, 80 Fed. 540-543.

"The presumption of patent cannot usurp the province of the Court, as to what constitutes novelty."

ESTOPPEL.

We contend that the complainants have, by their acts in inducing the officers of the City of Portland to include their process of paving in an ordinance defining the method, manner and kind of street pavement to be laid in the City of Portland, with knowledge that all street improvements must, under the charter, be let to the lowest responsible bidder, waived their patent, and granted the City a license to use the same without the payment of royalty, as no royalty was reserved by complainants.

Section 374 of the Charter of the City of Portland, which went into effect January 23, 1903, and which was the Charter under which the City was acting at the time the events in complainants' complaint are alleged to have occurred, provides that the Council of said City whenever it may deem it expedient, may order the whole or any part of the streets of the city to be improved, and to determine the character, kind and extent of such improvement.

Section 375 provides that when the Council shall deem it expedient or necessary to improve any street or streets within the City of Portland, it shall require plans and specifications from the City Engineer for an appropriate improvement, and the estimates of the work to be done and the probable cost thereof. And if the Council shall find such plans, specifications and improvements to be satisfactory, it shall approve the same and shall by resolution declare its purpose of making said improvement.

Sections 376 and 377 provide for the publication of notices and for remonstrances.

Section 378 provides that if no objection or remonstrance be made and filed with the Auditor within the time designated, the Council shall be deemed to have acquired jurisdiction to order the improvement to be made, and the Council thereafter, and within three months from the date of the final publication of its previous resolution, may, by ordinance, provide for making said improvement which shall conform in all particulars to the plans and specifications previously adopted.

Section 379 of said Charter provides:

"Section 379. Upon the approval of said ordinance by the Mayor, or if the same shall become valid without his approval, the auditor shall present to the Executive Board, at its next regular meeting, a copy of said ordinances, and the estimates, plans and specifications previously prepared by the City Engineer and adopted by the Council. Thereafter the said Executive Board, without delay, shall give notice by publication for not less than five successive days in the City official newspaper, inviting proposals for making said improvement. The Executive Board shall have the power to award the contract or contracts for said improvement and to impose such conditions upon bidders with regard to bonds and securities, and guarantees of the good faith and responsibility of bidders, for insuring the faithful completion of the work in strict accordance with the specifications therefor, and to make all rules and regulations in the letting of contracts that may be considered by said Board as advantageous to the City. Such contract or contracts shall be let to the lowest respon-

sible bidder for either the whole of said improvement or such part thereof as will not materially conflict with the completion of the remainder thereof, but said Board shall have the right to reject any or all proposals received. It shall be the duty of the Executive Board to fix the time in which every such improvement shall be completed and it may extend such time should the circumstances warrant. The said Board shall have power and authority to make all written contracts, to receive and approve all bonds authorized by this section, to provide for the proper inspection and supervision of all work done under the provisions of this Article, and to do any other act to secure the faithful carrying out of all contracts, and the making of improvements in strict compliance with the ordinance and specifications thereof."

The foregoing is a statement of the law in reference to street improvements on and prior to the 27th day of April, 1910, at which time the City, through its engineer and members of the Council, were preparing an ordinance known as Ordinance No. 21,172, which was entitled, "An Ordinance in Relation to the Improvement of Streets and Declaring an Emergency," and in which the City defined the kinds and quality of improvements which were to be adopted by it for the improvement of streets.

Complainants were seeking to establish a paving business in the City and were anxious to have their pavement used upon the streets and in public places, and had employed Mr. George M. Hyland of this City to promote their interests and secure a foothold in the City of Portland for the lay-

ing of their pavement. We call the attention of the Court to the testimony of Mr. Hyland, on page 126 of the record:

"Q. State your name, age, residence and occupation.

A. George M. Hyland, age forty-four years, residence 625 Halsey street, Portland, Oregon, occupation farmer.

Q. What was your occupation in 1909 and 1910?

A. I had charge of the promotion of the Oregon Hassam Paving Company, promotion department.

Q. By that do you mean securing the work?

A. Yes, securing contracts.

Q. How long have you been connected with the Hassam Company in that capacity?

A. Two years.

Q. State whether or not you had anything to do with the incorporation of the specifications for Hassam pavement in the ordinances adopted by the Council of the City of Portland on the 27th day of April, 1910, being Ordinance No. 21172, entitled, "An Ordinance in Relation to the Improvement of Streets, and Declaring an Emergency."

A. Was that the general ordinance covering paving of streets?

Q. Yes.

A. I asked the engineer to incorporate our specifications with the rest, with the other paving companies and specify the name "Hassam."

Q. Did you furnish a copy of your specifications as incorporated in said ordinance to the City Engineer?

A. (Page 127.) Yes, I furnished him a copy of the specifications at two different times.

Q. What did you say to the engineer at that time as near as you can recollect?

A. I requested him to include the Hassam specification on the promise that we would furnish the City the same protection as other paving companies; that our people were established in this community now and that we were entitled to the same consideration others received. That is the substance of the conversations I had, as nearly as I can remember at this time.

Q. Previous to the adoption of this ordinance had the Hassam pavement been recommended as standard pavement in the City of Portland?

A. Not by the Council or City authorities. They had declined to pass an ordinance authorizing it and we had been obliged to depend on each individual ordinance for the work.

Q. Had Hassam pavement been laid on the streets of Portland prior to that time?

A. Yes, a small amount of it had been, in certain streets."

Mr. J. W. Morris, called as a witness in behalf of defendants, page 144 of the record, testified that he had been a civil engineer for eighteen years, engaged in railroading, municipal engineering and construction work.

"Q. (Page 145.) What official position have you occupied in the City of Portland?

A. City Engineer for two years from July 1st, 1909, to July 1st, 1911.

Q. Did you hold that position on and prior to the 1st day of April, 1910?

A. Yes, from July 1st, 1909.

Q. Do you recall an ordinance adopted by the City of Portland and by the City Council and signed by the Mayor, No. 21,172, entitled, "An Ordinance in Relation to the Improvement of

Streets and Declaring an Emergency," which was an ordinance defining the manner and setting forth the specifications for the pavement of streets to be followed in the City of Portland?

A. Yes, I recall that ordinance.

Q. Who drew the ordinance?

A. I had considerable to do with it as it was drawn in my office under my supervision.

Q. Were you acquainted with any of the representatives of the Hassam Paving Company?

A. I was acquainted with their manager at that time. I don't recall any of the other members in the company now.

Q. Who was their manager at that time?

A. Mr. George M. Hyland.

Q. Do you recall whether or not in the course of the framing of that ordinance containing the specifications—did it contain the specifications of what was known as Hassam pavement?

A. Yes, it did.

Q. Do you know whether or not that was with the knowledge and consent of the manager of the Oregon Hassam Paving Company?

A. It was.

Q. Do you recall whether or not the manager of the Oregon Hassam Paving Company requested or solicited the incorporation in the ordinance described of the specifications of Hassam pavement?

A. I recollect that Mr. Hyland talked to me on that subject a number of times. It has been some time back but to the best of my memory Mr. Hyland represented to me that Hassam paving was on the streets of Portland, that it had been laid here and would be laid in the future, and as a business proposition he considered that the pavement should now be recognized in this ordinance that I was drawing up at that time.

Q. Were any objections ever made by any member of the Oregon Hassam Paving Company, or any other kindred corporation to that Company, to such specifications being incorporated in that ordinance?

A. Not to my knowledge."

This evidence was not disputed, nor was it claimed, nor is it a fact that any restrictions were placed upon the Council or upon bidders on such pavement. No mention or reservation of any royalty was suggested or made, and our contention is that such act gave the City the right to lay such pavement without the payment of royalty, and gave it the right to lay it in accordance with the Ordinance, which Ordinance provided that it should be let publicly to the lowest responsible bidder. The patentee had a perfect right to withhold the use of his patent from the City—had a perfect right to lay it on the streets of the City as they had been theretofore doing, as appears by the testimony of Mr. Hyland, and were under no obligations whatsoever to have their specifications incorporated in the Ordinance, but when they did so, it constituted a license to the City to lay such pavement—we would say an irrevocable license.

As said by Mr. Justice Lurton while on the Court of Appeals in the case of *Edison Electric Light Co et al. vs. Peninsular Light, Power & Heat Co. et al.,* 101 Fed. 831, quoting from page 836:

"To restrict the right of a purchaser of an apparatus embodying a patented invention to use it for the purposes for which it is peculiarly adapted, there must appear some express or implied agree-

ment by which the mode, or time or place of use has been limited. * * * It is a general principle of law that a grant necessarily carries with it that without which the thing granted cannot be enjoyed. The limitation upon this is that the things which pass by implication only must be incident to the grant, and directly necessary to the enjoyment of the thing granted. The foundation of the maxim lies in the presumption that the grantor intended to make his grant enjoyable."

And in this case, if the City could not advertise and let the construction of this pavement to the lowest responsible bidder, it could not enjoy the right given it by complainants to lay and use the pavement upon the streets of the City of Portland.

In the case of *Heaton-Peninsular Button-Fastener Co. vs. Eureka Specialty Co. et al.*, 77 Fed. 288, it was also the decision of Mr. Justice Lurton of the Court of Appeals, who used the following language on page 290 of the Opinion:

"Undoubtedly, the general rule is that if a patentee make a structure embodying his invention, and unconditionally make a sale of it, the buyer acquires the right to use the machine without restrictions, and when such machine is lawfully made and unconditionally sold, no restriction upon its use will be implied in favor of the patentee."

To the same effect is the case of *Illingsworth vs. Spaulding,* 43 Fed. 827. On page 831, the learned Judge quotes from Sec. 298 of Walker on Patents, as follows:

"An express license to use a limited or an unlimited number of specimens of a patented article, implies a right to make these specimens and to em-

ploy others to make, and will protect those others in making, them for the use of the licensee."

So, therefore, it being admitted that the license was given to the City to lay the pavement, with no reservation of royalty, then under the doctrine just enunciated, the employees of the City, or rather contractors, will also be protected in the making of the pavement.

The case of *Anderson vs. Eiler et al.,* 50 Fed. p. 775, is a case where the defendant purchased two mantels, wishing to use them as a design in manufacturing mantels, they being engaged in that business. The patentee sold the mantels with the knowledge that the only object in purchasing was to copy and use his design, and the Court says on page 775:

"He thus sold the mantels with knowledge that the only object in purchasing was to copy and use his design, and did it without objecting to the use contemplated. The inference is therefore, we think, irresistible that he consented to this use. Whether he actually consented or not, however, the circumstances estop his denial. His silence at the time closes his mouth. If he did not mean to consent he should have said so. Such denial now, and a recovery of damages for infringement, would constitute a fraud."

The case of *Mueller vs. Mueller et al.,* decided by the Court of Appeals, 95 Fed. 155, was a case where a young man engaged in business with his father invented and patented a method of coloring glassware. He and his father used this patented process in the partnership business until the death

of the young man, when the latter's interest was transferred to a third party, and the partnership business was continued. Some years afterwards the widow brought a suit for an accounting on the patent, but the Court held that a license had been given to use the patent, and that she was now estopped from denying.

In the case of *Thomson-Houston Electric Co. vs. Illinois Telephone Construction Co. et al.,* 143 Fed. 534, the Court held:

"The seller of a machine intended to be used in be used by the purchaser in connection with a connection with a device covered by a patent owned by him, and which is inoperative without such device, impliedly grants the right to the purchaser to use it, and is estopped to maintain a suit to enjoin such use as an infringement of the patent."

In the case of *Thomson-Houston Electric Co. vs. Illinois Telephone Construction Co. et al.* 152 Fed. 631, the Syllabus reads as follows:

"The sale of electric engines, which could only be used by the purchaser in connection with a trolley switch or device covered by a patent owned by the seller, without any restriction in the contract, carried with it an implied license to use such device, not only with the engines so sold, but as well with others bought from other makers, and the seller cannot claim such use to be an infringement; nor is it material that it usually restricted the right to a use in connection with its own engines or cars, where no notice of such custom was given to the purchaser."

ARGUMENT ON THE FACTS.

The patents, upon which complainants base their suit, claim and describe nothing more nor less than a process of laying a Macadam road and grouting it with a mixture of Portland cement and sand. That these patents are void for want of novelty and invention seems clear from an examination of the

PRIOR STATE OF THE ART

Shown by the following publications:

Murphy Patent, March 8, 1881, Record pp. 155, 331. For pavement formed by layer of broken stone grouted and rolled.

Bayard Patent, Concrete Pavement, April 24, 1888, Record pp. 155, 333. Broken stone rolled, grouted with coal tar resin and unslaked lime.

Hagerty Patent, Concrete Pavement, Oct. 22, 1889, Rec. pp. 155, 335. Foundation of coarse rubble, top coating of thin grout.

Century Dictionary, "Macadamization," Record p. 156.

Vol. 20 Encyc. Brittanica, "Roads and Streets," 1892, Record p. 156.

See "Concrete Macadam" at p. 161.

"Practical Treatise on Limes Hydraulic Cements and Mortars," 1863, Record pp. 164-168.

Warren Patent for pavement or roadway, June 4, 1901, Macadam foundation covered with smaller stone coated with tar—rolled, Record pp. 190, 339,

Roads and Pavements, by Ira Osborne Baker, 1902, Record pp. 168 et seq. As to rollers and rolling see p. 172.

Bituminous Concrete, p. 175.
Asphalt Concrete, p. 176.
Warren's Method, pp. 176-178.
Whinnery's Method, p. 178.
Tar Macadam, p. 179.
Century Dictionary, Grout, Record p. 190.

Report City Surveyor of Rochester, N. Y., 1894, Record p. 197.

Concrete Pavement, Exhibit J, p. 198.

Special Consular Reports, Streets and Highways in Foreign Countries. 1891. Record p. 202.

(a) Artificial Cement Pavement, Record p. 203.

(b) Macadamized Streets—layer of broken stone rolled down with cement, Record p. 203.

(c) Second class streets, Record pp. 203-204.

(d) Bottoming, Record p. 204.

Prior use of Process:

As to grout, rolling, etc.—Edwards, Record p. 149; Brown, Record p. 237; French, Record p. 246.

Pavement and sidewalks in Liverpool; basement in Detroit, Gordon, Record pp. 131, 200.

Rochester, McClintock, Record p. 209.

Pavement, Eureka Wis., Gilman, Record p. 352.

Engine house floor, Michigan, Gilman, Record p. 355.

Factory floor, Grantsburg, Wis. Gilman, Record pp. 356-359.

The processes of constructing roads and highways have been by development and evolution, and not by creation and invention; and as mankind advanced in civilization, necessities for a better means of transportation to and communication with neighborhoods and with the markets, increased, and each succeeding century and generation has made improvements upon the processes formerly used.

The first great advance in road construction of which we have any account was that of the Roman Empire under Appius Claudius, who began the construction from the City of Rome of what was then designated and still bears the name of the Appian Way, and for the process of which construction you are referred to page 156 of the Record.

The next pioneer who stands out as a road builder was John Loudan Macadam, a Scottish engineer, who in the latter part of the 18th and the first part of the 19th centuries brought into use what is known as Macadam road. His process has been improved on from time to time by succeeding generations until we now have what is known as hard surface pavements, the different methods for the construction of which we will enter into in more detail later.

We will now briefly discuss the state of the art of road building prior to the application of Walter E. Hassam for his first patent, and will show that

there is no new method or process used by him in his road building under the so-called patents, and will take up the specifications of the contract between defendants and the City of Portland for the improvement of Commercial Street, and show that every process was old and had been used both singly and as a whole.

The first specification is that the road shall be graded full width down to subgrade. We assume that there can be no claim by complainants that any person cannot grade, so therefore, we will not discuss that portion of the specifications farther.

The next specification is that the roadbed shall be thoroughly rolled with a road roller weighing not less than ten tons, which rolling is to be continued until the street is rolled to the satisfaction of the City Engineer. The use of road rollers in the making of streets is almost as old as street-making itself and there is nothing novel in either the rolling of the subgrade or the rolling of the rock or material used in the construction of the road, and we will take up the question of rolling roadbeds with reference to the rolling of the material placed therein. It cannot be contended of course that the use of broken rock varying in size from two and one-half inches to one and one-half inches, spread on the roadway to a depth of six or eight inches, is new or would be patentable, so therefore the first question that we propose to address ourserves to is whether or not after the placing of this rock any claim could be made for the rolling of the same with a steam roller.

We respectfully call the Court's attention to

page 156 of the record, where a quotation is made from the Century Dictionary, copyrighted 1889-1895, under the head "Macadamization," in a description of the construction of roads constructed by Macadam, as follows:

"In the common process the top soil of the roadway is removed to the depth of 14 inches. Coarse cracked stone is then laid in to a depth of seven inches and the interstices and surface depressions are filled with fine cracked stones.

Over this is placed a bed laid seven inches deep of road metal or broken stone of which no piece is larger than two and one-half inches in diameter. This is rolled down with heavy steam or horse rollers and the top is finished with stone crushed to dust and rolled smooth."

This shows conclusively that for many years prior to the Hassam patents, the use of broken rock and the use of rollers for compacting the same were well known.

In an article entitled, "Roads and Streets," Volume 20, Encyclopedia Britannica, Ninth Edition, published in 1892, beginning on page 158 of the record, the following appears:

"Whenever it is possible a new road should be finished with a roller. The materials are consolidated with less waste, and wear and tear of vehicles and horses is saved. Horse-rollers if heavy enough to be efficient, require a number of horses to draw them and are cumbersome. * * * In Great Britain horse-rollers have to a great extent been superseded by steam road rollers in consequence of the superiority and economy in the work done. A 15-ton roller, 7 feet wide, giving upwards of 2 tons weight per foot, can thoroughly consolidate 1000

to 2000 square yards of newly-laid materials per day."

This was published in 1892, about fourteen years prior to the issuance of the patent. And quoting from the same article, same volume, page 161 of the record, which not only relates to the rolling but also to the process of grouting, which will be discussed a little later herein:

"*Concrete macadam,* formed by grouting with lime or cement mortar a coat of broken stone laid over a bed of stone previously well rolled, has been tried as an improvement on an ordinary macadamized surface, but not hitherto with much success. * * * It is sometimes made by first spreading a coating of broken stone and consolidating it by a roller, and then pouring over it a mixture of coal-tar pitch, and creosote oil, upon which a layer of small stone is spread and rolled in, and the surface finished with stone chippings rolled in."

This last reference to "stone chippings rolled in," also becomes material later on in considering the pea stone coat, which is referred to in the patent. And we respectfully call the Court's attention to this entire article as it is very instructive and shows the processes of road building that were known prior to the Hassam patent.

We desire to quote from a book entitled, "Roads and Pavements," by Ira Osborne Baker, Civil Engineer, and Professor of Civil Engineering, University of Illinois, published in 1904, more than two years prior to the application of Hassam for a patent (page 172 of the record):

"Sec. 341. ROLLING THE STONE. Rolling is a very important part of the construction of

a broken-stone road. The sub-grade should be rolled to prevent the stone from being forced into the earth. The lower course of the stone should be rolled to compact it, so that the pieces will not move one upon the other under traffic; and the top course should be rolled to pack or bind the pieces into place, to prevent their being knocked out by the horses' feet. Rolling accompanied by sprinkling is necessary also to work the binding material into the interstices so as to make the surface watertight."

And quoting from the same author, page 178 of the record, in describing the Whinnery method of road building, it states:

"A hot mixture of asphaltic cement and mineral grains is spread over the top of the layer of hot crushed stone in a sufficient quantity to fill the voids in the stone and to level up the unevenness of the surface, the layer being properly graded with paving rakes. When this operation is completed a steam roller of the asphalt type weighing not less than ten tons is to be operated over the surface until (1) the plastic composition is forced into the voids in the crushed stone, (2) the unevenness of the surface is filled up, and (3) the whole mass is thoroughly compressed and solidified. The roadway is then complete, and after giving it time to become cold and hard the street is opened to travel."

We desire to call your Honors' attention to the cross-examination of Mr. Walter E. Hassam, on pages 90 and 91 of the Record:

"Q. 33. You have stated, Mr. Hassam, that for a period of sixteen years you were constantly employed as an engineer in the construction of roads, streets and highways within the State of Massachusetts, what kind of a quality of roads and streets were you constructing?

A. Macadam, gravel, brick, asphalt, Warren bitulithic, granite block, wood block. I think that is all.

Q. 34. Were you ever in the employ of the Warren Construction Company?

A. No, sir.

Q. 35. You have laid their pavement?

A. As engineer and inspector of it.

Q, 36. But as such engineer you were and are familiar with every detail of the laying of Warren bitulithic pavement?

A. I am familiar with every detail of the laying of the Warren bitulithic paving, but not the mixing process of the top at their plant.

Q. 37. You are familiar with every step in the process of laying macadam pavement?

A. Yes, sir.

Q. 38. In the laying of brick pavement, what kind of foundation did you use, or cause to be used?

A. Ordinarily, concrete foundation, mixed method.

Q. 39. Did you use the same in preparing a foundation for wooden block?

A. Yes, sir.

Q. 40. And in the preparation of a foundation for granite blocks?

A. Yes, sir.

Q. 41. In preparing a foundation where a road or street is to be constructed you usually prepare your sub-grade, do you not?

A. We do, yes, sir.

Q. 42. A certain distance below the street grade?

A. Certainly.

Q. 43. The next process was to roll the sub-grade with a heavy roller?

A. Sometimes, not always.

Q. 44. Now, where the Warren Construction people laid pavement, they laid upon the sub-grade, prepared as I have indicated, broken rock or crushed rock, did they not?

A. They did, yes, sir.

Q. 45. They then rolled the rock with a heavy roller to reduce the voids, did they not?

A. They did.

Q. 46. They afterwards applied their mat or surface of asphalt, or whatever mixture they used, and rolled that, did they not?

A. They did.

Q. 47. They then applied a coat of fine chipped rock after the wearing surface had been applied and rolled that with a roller sufficiently heavy to force it into the surface of the street, did they not?

A. They did."

It will be seen from Mr. Hassam's own testimony that long before he had conceived the patent for the Hassam process, he was thoroughly familiar with—(1) the preparation of the sub-grade; (2) the use of broken rock as a foundation; (3) the rolling of the broken rock to reduce the voids to a minimum; (4) the application of pea stone upon the wearing surface; and, (5) the rolling of the pea stone with a roller in order to force it into the street.

We also call attention in this connection to the cross-examination of Mr. Harold Parker, on page 103 of the record. Mr. Parker had previously testified that he is one of the Directors and First Vice-President of the Hassam Paving Company, com-

plainant herein, with a general charge of the work, outside of construction.

Q. 16. Are you familiar with the construction of what is known as the Warren bitulithic pavement?

A. Yes.

Q. 17. How long have you been familiar with that mode of constructing pavement?

A. I think I saw the first Warren bitulithic pavement laid.

Q. 18. When and where was that?

A. It was in the City of Boston. I should be at a loss to tell you how long ago, but it was when they first got their patents out.

Q. 19. Prior to 1900?

A. It was somewhere about 1900. It may have been a year before or the year after, but within a short time of that date.

Q. 20. In laying Warren pavement the street is subgraded and usually rolled, is it not?

A. You get a firm sub-grade.

Q. 21. Then uncoated crushed rock of about two inches in diameter is laid lown to about five or six inches in thickness, is it not?

A. I have never seen that method carried out by the Warren Brothers.

Q. 22. You have never seen them lay crushed rock as a base?

A. And then put the tar on it?

Q. 23. After rolling it.

A. I have never seen it done by the Warren Brothers.

Q. 24. Have you seen roads, prior to say 1905, the base of which was constructed in the manner in which I have described?

A. Yes, sir.

Q. 25. You say you have constructed them yourself?

A. Yes, lots of them.

Q. 26. And after the rock was applied it was then rolled in order to reduce the voids to a minimum, was it not?

A. Yes.

Q. 27. Now, after the road had been constructed practically as far as I have described the process, have you ever known or seen the application of a binder of tar or other bituminous material applied?

A. On the surface of the road so built? Yes.

Q. 28. And after such binder was applied, have you seen it rolled in order to bind it or to drive the binder into the remaining voids of the rock?

A. Yes, by the additional application of some other substance to prevent the tar or other bituminous binder adhering to the roller. But you have got, in my experience, to put something with your tar or oil, whichever you are using, which will fill up and prevent its being too plastic.

* * * * * *

Q. 33. After you apply the binder on macadam roads it then should be thoroughly rolled, should it not?

A. Yes.

Q. 34. To force the binder into the voids?

A. The binder is carried into the interstices between the stones by the action of water as well as the process of rolling.

Q. 35. The mixing of sand and cement in parts of 1 to 1, 1 to 2, 1 to 3, and 1 to 4 are not new, are they?

A. No, sir, that is, sand and cement."

GROUTING.

That leaves then but one process in the course of the construction of the so-called "Hassam Pavement," that has not already been shown to have been familiar to every road builder and engineer, and to Mr. Hassam, himself, and that is the process of grouting, or the pouring of a mixture of cement and water into the interstices of the rock in order to form a compact mass.

GROUT.

Grout is defined in the Century Dictionary (page 190 of the record), as follows:

"GROUT. A thin coarse mortar poured into the joints of masonry and brickwork. A casing of stone outside, a foot and a half thick, also covered the rubble and grout work of Rufus: Harpers Mag. LXIX, 437."

"2. A finishing or setting coat of fine stuff for ceilings. E. H. Knight."

"Made with or consisting of grout. Grout wall, a foundation or cellar-wall formed of concrete and small stones, usually between two boards set on edge, which are removed and raised higher as the concrete hardens."

Grout. To fill up or form with grout, as the joints or spaces between stones used as grout."

"If Roman, we should see here foundations of boulders bedded in concrete and tiles laid in courses, as well as ashlar facing to grouted insides."

Grout and its use is also described in the article quoted from the Encyclopedia Britannica, on pages 161 and 162 of the record; and further on pp. 165, 168 of the record.

The process of grouting is also again described on page 180 of the record, in an excerpt taken from Baker's "Roads and Pavements," in the description of Tar Macadam.

Mr. Robert S. Edwards, a graduate of a technical school in Boston, on pages 147, 148 and 149 of the record, testifies:

"Q. Have you ever made any study of grouting, a manner of mixing and using cement as a grout?

A. I have practically spent the best part of my life since graduating from the university in becoming expert in that work.

Q. I would ask you whether or not outside of the process used by the Hassam Paving Company you are familiar and have been with the process known as grouting?

A. Yes, I am very familiar with that process. In fact have given it considerable study and thought and time in conjunction with the Portland Railway, Light & Power Company's new dam where I had the proposition come up of solidifying the foundation before we could build the dam. And after investigating the various methods for doing this and the various machines, we decided to use what is known as liquid cement grout forced in the rock under pressure as the only satisfactory existing method to employ to fill up the interstices or voids in the rock foundation.

Q. I will ask you to describe the process of grouting or mixing of the cement.

* * * * * *

A. The only difference in the method is, sometimes they use a richer grout than other times. The process of manipulation is practically the same. The constituents used in grout are of course cement,

sometimes they use it one to one, or one to two—one part sand to one part cement—or one part cement to two parts sand, according to the richness desired. The grout is generally mixed in a mixing machine to a consistency that will flow easily and then placed in tanks which are put under pressure and the grout forced from the tanks through tubes or pipes into the material or rock, or whatever it may be that is going to have its voids filled up or solidified. That is the general process used, and it has been used in several of the largest engineering works, and pieces of construction in the United States. For instance, the Brooklyn-New York subway—their steel cylinders were filled up with loose rock of different sizes, leaving an opening from the cylinders into the interior of the tube and after the steel cylinders were placed they attached these pipes or hose which were connected with the power grouting machines and the grout was forced into the rock until it filled up the voids. The Catskill aqueduct work used practically the same identically process, and several large engineering operations abroad have used it and it has become very common now.

Q. How long has that process been known to engineers?

A. The process probably has been known for at least eight to ten years, probably much longer, but within the eight to ten years it has been used very commonly in engineering work.

Q. In the construction of a street or roadway where it becomes necessary to fill the voids with cement, a pavement that has a rock foundation, would you say it required any amount of skill or technical knowledge to pour the grout on the rock and force it into the voids by pressure from a roller?

A. I would say that was the simplest form that is known in the application of grouting."

We also call the attention of the Court to the United States Patent issued to John Murphy, of Columbus, Ohio, dated January 26, 1881, and appearing upon page 331 of the record, which was a patent for a street or roadway, and in the description of the construction, which process is very similar to the alleged Hassam process, the following appears:

"After ramming, the interstices are filled to the top with grouting, thus making a level surface, which completes the pavement proper. Upon its surface a coat of sand is then spread, and the pavement will be ready for use in from twelve to twenty-four hours."

He then described the process of the mixing of the grout, and we respectfully call the attention of the Court to the cut or drawing appearing on page 330 of the record, for the purpose of showing that the principle of construction under that patent was almost identical so far as the foundation is concerned, with the Hassam process.

Mr. Walter E. Hassam on cross-examination, page 94 of the record, testified as follows:

"Q. 65. In your answer where you refer "1 to 2", "1 to 3", or "1 to 4", you mean one part of cement to two, three and four parts of sand, do you not?

A. I do.

Q. 66. This mixture of cement is not new, is it?

A. As a grout?

Q. 67. No, the proportions.

A. No, sir.

Mr. Arthur S. Browne, a patent expert and employee of complainant, on cross-examination, page 237 of the record, testifies:

Q. 5. What do you understand to be the meaning of the word "grouting," or "grout"?

A. I agree with the Century Dictionary definition quoted in the record.

Q. 6. Then there was nothing new or novel in the making of a grout consisting of Portland cement, sand and water, was there?

A. No.

Q. 7. How long did you know, prior to the application for the first Hassam patent, was the process of grout by pouring in extra sand, cement and water upon broken rock, slag, or other material for the purpose of forming a concrete, been known or used?

A. At least as early as the Hagerty patent, 413, 278, Oct. 22, 1889, which was about 16 years before the first Hassam patent. There may be earlier instances, but this is the earliest one shown by the publications and patents in evidence, and I have no earlier instance in mind."

Mr. Arthur W. French, Professor of Civil Engineering at the Worcester Polytechnic Institute, called as a witness on behalf of complainants, on page 246 of the record, testified on cross-examination as follows:

"X-Q. 7. Mr. French, you are familiar with the process of grouting with grout consisting of Portland cement, sand and water, are you not?

A. I am.

X-Q. 8. How long have you been familiar with this process?

A. About twenty years.

X-Q. 9. How long have you been familiar with the use of grout by pouring on broken rock, slag, or other material for the purpose of forming a concrete?

A. I should say about ten years.

X-Q. 10. Where the grout is thin and the broken rock would consist of pieces from one and a half to three inches in diameter, will not the grout by gravity permeate the entire mass?

A. That will depend a great deal upon the thickness of the lawer of broken stone, a thickness of from four to six or eight inches, if the stone contains a large percentage of quartz, I should expect a thorough permeation of the grout. With greater thicknesses, grouting becomes a very unthorough, uncertain method for filling broken stone.

X-Q. 11. You mean greater than eight inches?

A. Yes."

Grouting is also described in the Hagerty Patent on page 335 of the record, where in an application filed in the Patent Office, October 22nd, 1888, by Thomas Hagerty for the making of Concrete Pavement, a portion of his process is set forth as follows: "By laying a sufficient thickness of coarse rubble and a top coating of a thin grout prepared with sand and cement, or with evenly-laid stone blocks having a grout of cement and sand poured between the inter-spaces."

While there is other evidence contained in the record in reference to grouting, we think the foregoing is quite sufficient to establish the process of forming concrete by grouting, so therefore, it took no inventive genius on the part of Mr. Hassam to discover this portion of the process.

PEA STONE.

There is one other minor process that it might be well to notice briefly, and that is the adding of pea stone to the surface and rolling the same to imbed it into the concrete or top coating. We call your attention to the article quoted in the record from "Roads and Pavements," on page 177, where in the description of the construction of an asphalt pavement, the following is included:

"On top of the asphalt macadam is spread a layer of asphaltic cement, partly to seal the surface against the entrance of air and water, and partly to bind together with fragments forming the wearing surface. While the surface of the asphaltic cement is still sticky there is spread over it a thick coat of fine stone chips, which are then rolled and the road is ready for traffic."

The same process is described at the top of page 181 of the record in the description of the construction of a Tar Macadam pavement.

Mr. Hassam testified on page 92 of the record, on cross-examination, in describing the process of road building by the Warren Construction Company, with which he was familiar, as follows:

"Q. 47. They then applied a coat of fine chipped rock after the wearing surface had been applied, and rolled that with a roller sufficiently heavy to force it into the surface of the street, did they not?

A. They did."

Showing that Mr. Hassam himself was familiar with that process long prior to the application for his patent.

And on page 98 of the record, the same witness testified:

"Q. Now, the Warren Company also use the pea stones, do they not, and have for many years, as top surface?

A. Yes, sir.

Mr. Arthur S. Browne, the expert patent witness called by complainants, on page 237 of the record, testified:

"X-Q. 8. The use of fine pea stone for the top surface or finishing of a road has been used for a great many years, has it not, dating back to the construction of Macadam and Telford pavements?

A. Yes."

We have shown by uncontradicted testimony, and by the admissions and testimony of complainants and their witnesses, that every process used in the construction of the so-called Hassam Pavement had been known and used in the construction of roads and streets for more than ten years prior to the application of Hassam for a patent, and some of them more than fifty years prior to the date of said application.

We will now take up the testimony to show that these different processes have been *combined* by others in the construction of roads and streets, long prior to the Hassam patent.

We will first take up the Murphy Patent, dated March 8th, 1881, and appearing upon page 331 of the record, in which he describes his process as follows:

"In constructing the pavement the first step is to prepare the road-bed. If this be wet or springy

soil it should be underdrained, and, is, in any case, to be properly graded. Upon such bed I spread a layer of broken stone or slag, B, to the depth of about six inches, which is *grouted and then rolled* with a heavy roller, to form a firm and solid foundation. If the soil is dry and solid the broken stone may be dispensed with and a thin layer of gravel employed instead, which must, however, be well rolled. Having thus formed a firm bed or foundation, the next step is to deposit thereon a layer, C, of pulverized slag and lime mixed with sand. This layer should be about two or three inches in depth. The stone blocks A are then laid in courses so as to break joints, and the interstices are filled with grout, 1, to the depth of two or three inches from the bottom of the blocks. I next spread clean screenings over the stone surface until the interstices are filled or nearly so. This filling, 2, is then packed or pressed until it has a depth of one or two inches over the grouting. Its function is to keep the blocks steady in their place while being rammed, which is the succeeding step. After ramming the interstices are filled to the top with grouting, 3, thus making a level surface, which completes the pavement proper. Upon its surface a coat of sand is then spread, and the pavement will be ready for use in from twelve to twenty-four hours."

It thus appears that Mr. Murphy used the broken rock, the grout, the rolling, but used sand upon the top instead of pea stone. Of course this portion of it was intended as the foundation, but it must be remembered that was Hassam's first idea in obtaining a patent, to prepare a foundation only, and it was not intended as a wearing surface, and Murphy's process up to that point is almost identical with that of Hassam.

The Bayard Patent, dated April 24th, 1888, appearing upon page 333 of the record, is very similar, with the exception that either tar or cement may be used for filling the interstices, but the coarse rock, the rolling, and a grout are all used in its construction.

The Hagerty Patent, dated October 22, 1889, and appearing upon page 335 of the record, consisted of laying a foundation of coarse rubble to a sufficient thickness and adding a top coating of a thin grout prepared with sand and cement poured between the inter-spaces, with a top-dressing by any well known method to be added. In this patent the rolling and top dressing of pea-stone is omitted.

In the Warren patent, dated June 4, 1901, page 339 of the record, all of the processes used in the Hassam pavement are used in the Warren pavement, except the grouting, and Mr. Hassam testified as heretofore shown, that he was familiar with the process used by the Warren people when he was City Engineer of the City of Worcester.

Mr. George W. Gordon, who has resided in Portland for about twenty-two years, and formerly lived in Liverpool, England, testifies, on page 130 of the record, that he left Liverpool when he was about twenty-four or twenty-five years of age, and testified that he had seen pavements laid in Liverpool, England, and then testified as follows:

"Q. Will you describe what you term concrete pavements according to your observation, what you saw at that time?

A. There the rock was mixed by hand usually

then we put the mixture down on the streets and rolled it, or tamped it where we could not roll it; we used to get it graded of course, and then laid the foundation with the cracked rock or stone, and then put the cement on top of it, very much the same as they do it here.

Q. Are you familiar with the so-called Hassam pavement here?

A. Yes, I have seen it laid frequently.

Q. Will you state whether or not any of the pavement you saw laid there was at all similar to the so-called Hassam pavement laid here, and describe it if so?

A. The only difference between the Hassam pavement and the pavement that I have helped to lay in my boss's yards in Liverpool; he had large yards there we used to break the rock up with hammers; we would take all the refuse from the buildings and break it up with the hammer and pour cement and sand into that in the same manner the Hassam Paving Company do their work, with this exception: we had to put the cement and sand into the rock before rolling and roll it afterwards, that gave the cement a chance to get all around the rock. The way they do Hassam here, they lay the rock down without wetting it and then they take a roller and compact it by rolling until it loses about one-third of its volume and then when you come to pour on the sand and cement it does not cover the entire rock, it is not distributed evenly. They would not let us do it that way in the old country.

Q. Was that sand, cement and water a fluid mixture?

A. Yes.

Q. That was poured over the rock?

A. Yes, and we used to take a little hand-roller and four boys would get hold of it and roll it

back and forth until it was well rolled and compacted.

Q. In that kind of pavement were the voids or interstices filled with grout?

A. Yes.

Q. And rolled down afterwards?

A. Yes.

Q. That was forty years ago?

A. Yes, and that was done before my time, according to the old methods, the engineers used grouting methods long before my time. You can find that right in history where they mixed the stuff and put it on in very much the same way. It is an old, old method, this grouting, and can be found way back in the history of the Roman Empire; it was used then. Government engineers have used it for years in their construction work. There is nothing new about grouting."

And on page 200 of the record, the same witness being recalled, testified:

"Q. Since you were a witness here you have made some statements to me about some work you did in Detroit, will you tell what that work was and when it was done?

A. I was building a house there, about a block and a half north of Woodward avenue and west of the river, for Henry Engelbert, architect; it was a brick house and Handler Brothers were the contractors for the brick work, and I put this very same kind of what is called grout in the concrete basement of that house.

Q. Describe how you did that?

A. They gave us the privilege sometimes in concrete work of taking the old broken brick and stone and breaking them up and using them for concrete work, and we used them in this basement, and after breaking them up we took sand and ce-

ment and made a grout and poured it on there, just exactly the same kind of grout that is used now. The broken stone and brick were spread on the basement floor and leveled up after the basement floor was got to the proper grade; they would put down the stakes to get the thickness and after we got the thickness we took the stakes out and poured in the grouted cement.

Q. How was this grout made?

A. Mixed sand and cement together with water and poured it on, and we took a tamper and tamped it well, and we used about equal quantities of sand and cement. It was an ordinary thing to use that sort of grout then and I never thought anything of doing it.

Q. This broken stone and brick covered the whole basement and over that you poured the sand, cement and water mixed together, as you have described?

A. Yes, that is a regular concrete floor.

* * * * * *

Q. When was this?

A. About thirty-two years ago, as near as I can recollect."

Mr. Gordon is a reputable citizen and is a resident and property holder within the City of Portland. He gave dates, times and places where this process he testified to has been used.

This uncontradicted testimony was given, as appears by the record, on November 12th, 1912, and complainants had ample time to make examination and refute the statements made by Mr. Gordon if they were untrue.

Mr. A. C. Gilman, called as a witness in behalf of defendant Reliance Construction Company, page

351 of the record, testified that he was born in Eureka, Wisconsin, in 1860; has been engaged in mining, lumbering, farming and railroad work; and in answer to the interrogatory as to whether or not he had ever seen any pavement that was laid with crushed rock rolled or tamped, with a grouting of Portland cement, water and sand poured over it, answered:

"A. Yes, I have seen that; it wasn't called Hassam, though; it was a foundation for other kinds of pavement, of cedar block pavement, generally, as a base of pavement the same as Hassam —the foundation. And I have seen sidewalks built of it and basement floors and engine house floors, factory floors made in the same way.

* * * * * *

A. It has been years ago, I saw an approach to a blacksmith shop made from it, when I was 14 years old; that was Eureka, Wisconsin. That was made from the street to the blacksmith shop; it was an approach to the shop. It was about 25 feet from the walk to the shop—20 feet wide, probably; about 20 feet square. I saw that when it was being made.

They excavated about eight inches deep to receive the pavement, they then pounded up native stone there into suitable sizes and filled the excavation with loose rock, and then tamped it with a tamp bar or a block of wood, and then made the mixture of cement and sand and poured it over this stone and then swept it in and mixed it in a liquid form; that is quite a thin solution, with water and cement and sand, so that it could be poured in and fill all the voids in the rock, and he then tamped it to be sure that the air was expelled and the mixture was made a solid mass and then they would mix up another batch and pour in and after it was finished he

smoothed it up with a trowel or a piece of wood; amounted to the same thing as the present Hassam pavement.

* * * * * *

Q. To your knowledge how long was that pavement in existence; that is, as long as you personally knew about it?

A. Oh, I saw it ten years afterward, but it must have been—the building burned about twenty years afterwards, and I understand there was another building erected on the ground.

* * * * * *

Page 354:

Q. Do you recall the name of the man who laid that?

A. No, I could not; he was a Russian. I can spell the name, I think, but I could not pronounce it.

Q. Well, you might spell it.

A. W-a-r-y-z-e-n-a-k; we used to call him "Washnaw" for short; that is as near as I can get to it.

I have laid two engine floors myself in the same manner and one factory floor.

There was one at Crystal Falls, Michigan; well, it was in front of the boilers, what we call a fire hole, laid in the same manner, excavated first and filled with rock, brick bats, and then a mixture of cement and sand and water poured over it and smoothed off.

It was tamped several times, both before and after grouting. That engine floor—engine house floor at Crystal Falls, Michigan, was, I should judge, eight feet by twelve feet.

I built an excelsior factory at Grantsburg, Wisconsin, with a boiler house attached; the floor of the factory had a similar floor to the Hassam

pavement, and also the fire hole in front of the boiler.

Q. How large a floor was there at the excelsior factory; what was the size of it?

A. About 24x40 feet.

Q. And how did you make that?

A. Cleaned off the loose soil and tamped the sand—sandy country there—tamped the sand and then put in crushed rock. Bought a carload of crushed rock.

Q. What size?

A. from half an inch diameter to three inches diameter, irregular shape, spread over about five inches of this rock and had men tamp it with tamping bars and mauls, and then mixed a thin solution of cement and sand and water and flooded it over the rock. We had boards around the rides of the floor to keep the water from running out—the grouting, and then tamped it and let it harden a couple of hours, and then finished it by rubbing with trowels and wooden straight edges.

Q. How did you pour the grout?

A. With pails or buckets; mixed up a large batch and then men would carry it in pails and pour it on and other men would sweep it in with brooms.

Q. When was that built?

A. That was built the year following the Spanish War, 1899; that is still there at Grantsburg, Wisconsin. The only mill there; only excelsior mill there; just on the edge of town.

Q. Are those the only instances in which you have personally laid or supervised the making of the kind of pavement described that you now recall?

A. I used it as a starting of a foundation in a building; I don't recall any floors.

Q. Well, where have you used the same process in starting foundations of buildings?

A. In starting foundation walls it is quite common to use this method in making footings of walls.

Q. You mean by that putting in crushed rock and then pouring in grout over it?

A. Yes.

Q. Where have you used such methods?

A. In Minnesota with the Iron Range Railroad, and I during that time laid several foundations for steel bridges, water tanks, and in depots. It is quite common to start the wall in that manner.

On cross-examination, page 361, as to where witness had seen pavements laid prior to 1884, the witness having testified that he had seen it in basement floors, dwelling house basements, warehouse floors, in excavations for scales, for track scales, railroad track scales, the following question was propounded:

Q. We are speaking now of prior to the time you laid the pavement for the engine house that you have spoken of, in 1884; had you seen it laid anywhere else except the blacksmith shop prior to 1884?

A. I don't recall any place. It is in common use, though, the concrete mixture. Yes, I can remember another incident. A man laid sidewalks around his place, built a house in almost the same way.

Q. Where was that?

A. That was Eureka, Wisconsin.

Q. Eureka.

A. But instead of using cement he used lime mortar; made a grouting of lime mortar.

Q. What was his name?

A. His name was Hager.

Q. Does he live there yet?

A. No, he has been dead years ago; I think the house is still standing; was the last I knew.

Q. Where is the house?

A. Well, it is on what we call Hager's Hill in Eureka, right on the edge of town."

The testimony of this witness is material to show that the process of the construction of the concrete upon which Hassam claims his patent, and he only claims it upon the process, was familiar to other persons long prior to the date of his alleged invention, and by comparing the process used by Gilman, the Court will see that it is substantially the same process used by Hassam.

McCLINTOCK'S PAVEMENT.

The most conclusive evidence against complainants' contention is the use of this identical pavement in Rochester, New York, in 1894, prior to June 1st of that year, being an extract from a printed report addressed to the Executive Board of the City of Rochester, and signed by J. Y. McClintock, City Surveyor, and the extract appears upon page 198 of the record.

In order to place the two processes concretely before your Honors we will place the Hassam Process described in Pat. No. 819,652 beside that of the process described and used by McClintock.

Hassam Process, page 255 of the record, line 59:

"The street is first dug out to the proper depth for the subgrade, which is rolled, if needed. Broken stone or gravel is then spread to a proper depth and

rolled with a steam-roller or compressed by any suitable means until the voids between the stones are small and the surface even. It will be noted that as there is no coating of cement, bituminous, or other material on the pieces of stone they can be compressed very close together and solid, and the voids left between them will be extremely small. When the stone or gravel has been compressed to the desired closeness and firmness, it is grouted with a mixture of cement, sand, and water, which may not be prepared until immediately before it is to be used and which does not require excessive handling, like the mixture for concrete, and therefore does not suffer from being handled by careless workmen. All the voids are filled with the cement in the grouting operation. The cement is then allowed to stand until perfectly hard, and a solid foundation is obtained for brick, stone or wood block, or any other form of paving which will sustain a heavier load than if mixed concrete is used. Grouting is not only a great improvement over the old method of mixing concrete by hand, but it reduces the cost of construction."

McClintock's Process, page 198:

"*Concrete Pavement*: There are many miles of streets where a cheap pavement is requisite, and where macadam with trap rock would be suitable except that it seems desirable to get rid of the small amount of mud which is usually present, and to have a surface that can be washed off clean. To meet this requirement we tried in 1893 the following on South Fitzhugh street north of the canal. *The surface of an existing macadam pavement was picked off and a layer of trap rock, six inches thick in the middle and two inches thick at edge of paved gutters, was put on and thoroughly rolled with a steam roller. After this was done, instead of put-*

ting on a binding material and rolling that in as usual, Portland cement grout, one of sand to one of cement, mixed to the consistency of cream was carefully poured in so as to fill all the voids between the broken stone and formed a solid matrix to hold each stone firmly in position. The stone was thoroughly wet just before pouring in the grout. One barrel of cement was used to each 8 7-10 *square yards of pavement. After the mortar had set for twenty-four hours, sand was thrown over the surface and water sprinkled upon it, and all travel was kept off it for nine days.* This has been down eight months and already shows that the size of stone used was too small; it would all pass through a one and one-half inch ring. The stones are so small that the calk of a horseshoe throws out bodily a stone sometimes. I believe it will be well to try this again with stones which will pass a three-inch ring and will not pass a two-inch ring. The cost of this pavement was one dollar per square yard."

The deposition of Mr. McClintock was taken in March, 1913, which deposition appears on page 207 of the record, in which he testifies that he is a resident of the City of Rochester, New York, is a Civil Engineer, age sixty years, and that in 1893 he was City Surveyor of Rochester, New York; that he prepared the original report marked Defendant's Exhibit "J," in 1894

Answer: It was printed under my supervision and probably one or two thousand copies were issued. Copies were sent to engineers, highway officials in nearly every city in the country. One or two copies were filed in the library of the American Society of Engineers and to the City officials of the City of Rochester.

* * * * * *

Eighth Interrogatory: Read the paragraph on page 5 of Defendant's Exhibit "J," under the heading "Concrete Pavement" and state whether or not all the facts stated in that paragraph are true of your knowledge.

Answer: All of the facts there stated are true."

This process used by Mr. McClintock twelve years before Mr. Hassam's application for patent is identical in every respect with the Hassam patent, except that McClintock did not roll the pavement after grouting, but that would be a matter of choice with the engineers, and the record will disclose there is some dispute as to whether or not the mass should be rolled after grouting, but certainly Mr. Hassam was not entitled to a patent upon McClintock's process by the mere addition of rolling. It is true that McClintock added sand instead of fine pea stone, but that is also a matter of choice, and it required no inventive genius to substitute one material for another, where the material performs the same office.

We are able to almost place the printed report of McClintock in the hands of Walter E. Hassam. Mr. McClintock testifed that he sent the report to the engineers of all the principal cities, and it is hardly probable that he would overlook the City of Worcester with a population of about 160,000 people, and in a neighboring state.

Mr. Hassam testified, page 81 of the record, that he graduated from Norwich University in Vermont in 1887, with degree of Civil Engineer, Master of Science, and served sixteen years as Assistant

Engineer in the City of Worcester, having charge of the road construction and the water department as an engineer. So therefore he occupied that position in 1894 at the time of the publication of McClintock's report, had charge of the road department, and the conclusion becomes almost irresistible that he got his idea for his patent from the McClintock report, because he has copied it in toto in his first patent, page 255 of the record, with the addition of the rolling for the purpose of compressing the chipped stone into the wearing surface. Mr. Hassam added nothing new to the idea of McClintock; he took his idea bodily and employed it for the purpose of getting a patent, thus creating a monopoly upon a paving system or process that was well known long prior to the date of his application for a patent, and it is a fraud upon the public to require it to pay from fifteen to fifty cents per yard royalty to this Company for leave to construct a street or highway by the simple methods employed by the Hassam people, thus creating a burden upon the taxpayers and property holders which they should not be called upon to bear.

It is conclusively established by the testimony that the witness McClintock in 1893, had employed the identical process, afterwards claimed as an invention by Hassam under his first patent, upon the public streets of the City of Rochester, New York. He had thereby given the public the right to use it for all like purposes to which it was adaptable, and no one could by obtaining a patent therefor, deprive the public of the right to use that process.

As Mr. Justice Woods says in the case of *Blake vs. San Francisco,* 113 U. S., p. 679, on p. 682 of the Opinion:

"It follows from this principle that where the public has acquired in any way the right to use a machine or device for a particular purpose, it has the right to use it for all the like purposes to which it can be applied, and no one can take out a patent to cover the application of the device to a similar purpose."

And the fact that Hassam finally added the rolling of the mass after grouting, and the pea stone for top dressing, did not constitute invention, for the reason that both processes were old and well known as we have heretofore shown, and were such additions as would suggest themselves to the ordinary road builder.

If McClintock had obtained a patent for his process as outlined by him in his printed report, Hassam could not have successfully resisted a suit for infringement. It would not have been sufficient for him to claim that he had improved on the process by adding the rolling and pea stone. The basic idea of the process was furnished by McClintock who, as he testified on page 210 of the printed record in answer to the interrogatory as to what experience he had had prior to 1893 in constructing roads and pavements:

"I have practiced civil engineering since 1869 and up to 1880, was employed on general engineering work, and especially railroad work, and during the time was for a number of years Chief Engineer of the old original Boston & Maine R. R. and

was familiar with the construction of pavements around stations and station yards. I was also familiar later with the experience of the Massachusetts Highway Commission in its early studies, during which time my brother, W. E. McClintock, was a member of the Commission."

And in answer to the interrogatory on the same page as to whose suggestion the laying of the concrete pavement described by the witness was done, answered:

"As far as I know the proposition originated with myself. The impelling consideration came from the fact that I had recently become City Surveyor, and macadam pavements had become so unpopular that it required a vote of fifteen out of sixteen aldermen to pass an ordinance for such pavement in the City of Rochester, because many miles of such pavement had been built here with soft local stone which would usually wear out so as to be scraped off by the Highway Department the following year. I was familiar with what was being accomplished in New Jersey and Massachusetts in the use of trap rock and so making a successful macadam road. Being familiar with the use of cement and being impressed by the possibilities of using Portland cement which then had first been reduced to a price warranting its use in highway construction, it was very natural that I should try it as described. I made a communication to the Board of Aldermen discussing the subject and emphasizing the importance of trying it and asking them to allow me to try it experimentally in the manner described so that all of us could have the benefit of such experiment."

McClintock was not seeking a patent and his explanation goes to show that his ideas and thought

upon the subject were a part of the evolution of road building; and it was further suggested to him for the reason that the cost of cement had been reduced in price so that it could be utilized for road building purposes, the price theretofore having been prohibitive, which fact perhaps accounts for the reason of its non-use by road builders prior to that time.

But had McClintock taken out a patent and never done anything more than to construct the one street testified to, or not to have constructed a street at all, it would have been sufficient to defeat complainants' patent, for the reason that the patent laws are only intended to reward those who generate a new idea, not those who copy the ideas of others; and it is not invention for one merely to copy the specifications of a patent and put it into practical use, even though the original inventor has not seen fit to use it.

As is well said by Mr. Justice Gilbert in the case of *Hyde vs. Minerals Separation,* 214 Fed., p. 100, quoting from p. 105 of the Opinion:

"A paper patent if it fully describes an invention, whether it be a machine, device, or process, is just as effective to show anticipation, as a patent which describes an invention which has gone into extensive use, for a presumption of operativeness and of some utility attends the granting of letters patent."

And the learned Judge quotes with approval from *Roberts vs. Ryer,* 91 U. S. 150, as follows:

"A change only in form, proportions, or degree, doing substantially the same thing in the same way,

by substantially the same means, with better results * * * is not such an invention as will sustain a patent."

He also quotes, *Fried, Krupp, Aktien-Gesellschaft vs. Midvale Steel Co.,* 191 Fed. 588 (112 C. C. A. 194) as follows:

"But mere useful and economical administrative methods, however valuable, while they may and usually are incident to invention, do not themselves constitute invention."

Further than this, Mr. Hassam, the alleged inventor, had himself, while in the employ of the City of Worcester, used this same process a year prior to his application for a patent.

We call the attention of the Court to page 93 of the printed record, where the following questions were put to Mr. Walter E. Hassam on cross-examination:

"X-Q. 56. When did you first begin the construction of what is here referred to as "Hassam pavement?"

A. In 1905.

X-Q. 57. Where?

A. In the City of Worcester.

X-Q. 58. What quantity of pavement did you construct in 1905 in the City of Worcester?

A. One street.

X-Q. 59. Where, that is what block?

A. Salem street.

X-Q. 60. Between what other streets?

A. Between Myrtle and Madison and Park streets, with a granite block surface on them.

X-Q. 61. Was that street constructed under contract with the City?

A. No, sir, it was not.

X-Q. 62. Was it paid for by the City?
A. No, sir; it was done when I was Street Commissioner, by permission of the Mayor of Worcester.
X-Q. 63. At the expense of the City?
A. Yes, sir."

He did not then claim any patent. He had not filed a caveat and had given no notice to any one that he claimed any invention or discovery of any new process for street paving. The street was paid for by the city, became public property, and at least for one year it was public property which any one could have laid, any one could have copied, but which no one could have patented. And in this connection we desire to call the attention of the Court to the case of *Elizabeth vs. Paving Company,* 97 U. S. 126, where on p. 136 of the Opinion, the Court says:

"Had the City of Boston or other parties used the invention by laying down the pavement in other streets and places with Nicholson's consent and allowance, then indeed the invention itself would have been in public use within the meaning of the law."

It must be remembered that he did not anywhere testify nor did any other witness testify as to any experiments by Mr. Hassam, any study, thought or care used by him in formulating this process which is at least very usual in patent cases. There is always a certain experimental stage, accompanied by either success or failure until the perfected article or process is finally evolved, but nothing of that kind appears in this case, and the only testimony on that point is the testimony of Hassam as to laying

this street at public expense, and for which he was supposedly drawing a salary; and we are forced to the conclusion that Mr. Hassam took the idea bodily from the printed report of McClintock, who testified that he sent copies to all of the principal cities, and it is not likely that he would have overlooked the City of Worcester, with 160,000 inhabitants, and Hassam was then the City Engineer in charge of the construction and improvement of streets and highways; and the further fact that Hassam in his first patent does not deviate in any manner from the process so laid down by McClintock.

Almost the entire testimony of complainants' witnesses is reduced to the exploitation by the Hassam Company of this process, showing the number of states where the same has been used, and the number of miles of highway laid, together with extensive advertising and the amount of money invested; but exploitation is not invention. It may and does tend to show the usefulness of the article or process and the advertising ability of those handling it, but does not in any way tend to show that those who are exploiting it were the original inventors.

As Mr. Justice Gilbert well says in the case of *Hyde vs. Minerals Separation*, cited supra, on page 107 of the Opinion:

"The decision of the Court below appears to have been largely influenced by the consideration that the appellees' patent had gone into extensive and successful use. The fact that a patented device or process has gone into extensive and successful use is often of value in determining the question of

invention and patentability. It is referred to for the purpose of turning the scales in cases of grave doubt. It is of no value whatever where the question of the invention or patentability is free from doubt, and in any case its value depends largely upon the causes which produced it. It is often due to business ability in manufacturing, exploiting, and advertising, and to the fact that prior conditions have not stimulated development." Citing the case of Olin vs. Timken, 155 U. S. 141, where the Court said: "While the patented article may have been popular and met with large sales, that fact is not important when the invention is without patentable novelty." Citing also the case of McClain vs. Ortmayer, 141 U. S. 419, where the Court said: "That the extent to which a patented device has gone into use is an unsafe criterion even of its actual utility is evident from the fact that the general introduction of manufactured articles is as often effected by extensive and judicious advertising, activity in putting the goods upon the market, and large commissions to dealers, as by the intrinsic merit of the articles themselves."

IN CONCLUSION.

Take the process described in the Murphy, Hagerty, Bayard, and Warren patents, the process of making concrete macadam described in the Encyc. Britannica; tar macadam described by Baker, the McClintock process, and compare each of these on the one hand with Hassam's patents and claims on the other; is it possible to point out any such difference between the former as would call forth the inventive genius of any person to make the latter? They are identical in principle, identical in theory, identical in process of construction.

Mr. Hassam does not specify any particular thickness of the trap rock in his patent, so if anyone could use six inches of rock, as was done by McClintock, he could use eight inches or ten inches, and complainants' counsel distinctly said in his argument in the Court below that any person could use the McClintock process without infringing the Hassam patent.

In Hassam's second patent he rolls the roadway after it is grouted, but this does not produce any new or different result from what was already well known—the compression, and was not done in any different manner than others had done before him as heretofore shown.

In his third patent he merely adds the pea stone. This did not produce any new or different result, was not a combination of old methods producing a new result, but producing the *same result.*

Counsel also stated in the Court below that we could use the Murphy Patent (page 331 of the record), where Murphy's statement is:

"What I claim is—

The improved pavement, formed of the broken stone and grout foundation B, the layer C, of slag and lime, the stone blocks A, and the intersticial filling of grout, all as shown and described."

Complainants have no patent upon grout, or the making or mixing or use of the same, and any person can use a cement grout in the construction of foundation B, as well as the grout prescribed by Mr. Murphy, and when that is done they have the

Hassam pavement complete as specified by Mr. Hassam in his patents.

The rule is so clearly stated therein, that we beg to refer to *Winston vs. Croton Falls. Const. Co.,* 194 Fed. 123.

This was an appeal from the Circuit Court of the United States for the Southern District of New York, and dismissing a bill in equity for infringement of patent for apparatus for making concrete blocks, and as applicable to the case at bar we commend to the Court's attention the facts and Opinion in that case. The Court said, p. 124:

"The only novel feature about the entire arrangement is the location of the moulds (for concrete), 'a plurality in the space between the tracks' and 'a plurality alongside and outside of the trackway.' By this arrangement more molds can be filled at the same time. But a mere improvement in the method of doing the work does not necessarily lie within the boundaries of patentable invention. In the opinion of Judge Hough is found the following: 'The complainant has apparently devised an organization for a concrete block yard showing skill in economics and marked executive ability, yet he has utilized the old materials and old tools, not in a patentable combination, but only in economical sequence. What he uses he does not utilize in combination to produce a new mechanical or material result; but he arranges the order of work so as to minimize both labor and transportation, and this, in my judgment, is not patentable.' "

And referring to the views expressed in a former case decided by the same Court, the following quotation from the Opinion in Dodge Coal Co. vs. R. R. Co., 150 Fed. 738, is found:

"The would-be inventor or designer of novel mechanism for accomplishing these objects, therefore, is presumed to have before him the whole field of the art of engineering construction applicable to the collection and removal, the elevation and conveyance of such materials from one point to another. And the question here presented is not what these particular patentees may actually have invented, but whether the state of the art in such engineering field was such that it would require invention to construct such apparatus, or to adapt the constructions known in the art of the exigencies of a particular situation, or the requirements of a certain class of materials."

For instance the witness Gilman in describing the pavement constructed as an approach to a blacksmith shop, states that the stone was broken by hand, and tamped with a rammer or tamper, both before and after the grout was poured. It would be economical to crush the rock in a stone crusher instead of breaking it by hand. It would be economical to roll the crushed rock with a steam roller instead of tamping it by hand. It would be economical to pour the grout from a pipe devised for that purpose rather than from a bucket; but these changes in the method of doing the work would not be invention but mechanical, economical and executive skill.

The methods of laying concrete in place described by Gordon and Gilman and by McClintock cannot be disposed of by saying they are merely abandoned experiments. The evidence goes further and clearly shows that the methods referred to were so obvious that they were used by different people in different parts of the country. If the Russian's

method described by Gilman had been patented, clearly Hassam's patent would have been anticipated because Hassam's claim in his first patent is not limited by rolling the uncoated stone but makes a claim for compressing it in any other way. The compression is clearly not patentable, because compression of crushed rock had taken place theretofore by rolling and tamping, and by the pressure of traffic.

The three layers in the Bayard patent were successively rolled and then united by a filling coat or mixture (Record, p. 333), which percolates through the pores and interstices which have not been closed by rolling and unites the layers to form a perfectly water tight and impervious mass.

The method is simply that of preparing concrete upon the ground instead of mixing it and pouring it, and this process was old and well known before Hassam's patents, and is precisely the same as making a macadam road, except that the binder is grout instead of water and dust. It is like the bituminous concrete described by Baker and the other documentary evidence except that the binder is composed of Portland cement and sand instead of a bituminous binder, and a change of material for binder does not constitute invention when the materials are all well known and in ordinary and common use.

We most earnestly and sincerely contend, for the reasons shown upon the law and the facts, that the decree of the District Court should be reversed with costs to appellants in both Courts.

Respectfully submitted,

JESSE STEARNS,
JOHN H. HALL,
Of Counsel for Appellants.

2505

United States Circuit Court of Appeals

FOR THE NINTH CIRCUIT.

HASSAM PAVING COMPANY and OREGON HASSAM PAVING COMPANY,

Complainants-Appellees,

vs.

CONSOLIDATED CONTRACT COMPANY and PACIFIC COAST CASUALTY COMPANY,

Defendants-Appellants.

APPEAL FROM THE UNITED STATES DISTRICT COURT OF OREGON.

BRIEF FOR COMPLAINANTS-APPELLEES.

LOUIS W. SOUTHGATE,
CAREY & KERR,
Solicitors and Counsel for Complainants-Appellees.

C. G. BURGOYNE, 72 to 78 Spring Street, New York.

INDEX.

United States Circuit Court of Appeals

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APPEAL FROM THE UNITED STATES DISTRICT COURT OF OREGON.

BRIEF FOR COMPLAINANTS-APPELLEES.

Statement of the Case.

This case is a patent suit based on three United States letters-patent granted to Walter E. Hassam, No. 819,652, dated May 1, 1906, Pavement and Process of Laying the Same; No. 851,625, dated April 23, 1907, Process for Laying Pavement; No. 861,650, dated July 30, 1907, Artificial Structure and Process of Making the Same. The patents are stated in the order in which the applications therefor were filed, and are known in the record as the "Hassam First, Second and Third Patents." These patents cover the well-known "Hassam Pavement."

The suit involves claim one of the first patent; claim two of the second patent; and all four claims of the third patent.

The first patent covers the principal invention and the second and third patents cover improvements thereon. There is no question but that the invention and improvements of the three patents can be combined in one pavement, and have been so combined and used, both by complainants and defendants.

The amended bill of complaint was filed in April, 1912. Answer was filed, proofs were taken by deposition, and the case argued before His Honor, District Judge ROBERT S. BEAN.

Defendants admitted infringement of the first and third patents, and only raised a quibble in regard to infringement of the second patent.

The main defense was an attack upon the validity of the patents based on certain prior patents, prior publications and alleged prior uses.

His Honor, Judge BEAN, filed an opinion, holding that the defenses were not maintainable. This opinion is reported, Volume 215 of the Federal Reporter, pages 114–117. By some oversight, this opinion is not printed in the record. It is added as an appendix to this brief for the convenience of this Court.

In pursuance of this opinion, the usual interlocutory decree for injunction and account was entered April 27, 1914, Record, page 367. Defendants have appealed from this decree.

As the testimony was taken and printed largely before the new Equity rules went into effect, by agreement of counsel, the record in the lower Court has been certified as the transcript.

Defendants' assignments of errors are general in their nature and need not be considered *seriatim*.

The substantial issue before this Court is the validity of the patents in suit, in view of the evidence adduced by the defendants.

Statement of Facts.

The inventor, Walter E. Hassam, served sixteen years as Assistant Engineer in the City of Worcester, Massachusetts, having charge of road construction ; and three years as Street Commissioner, having complete charge of streets. The invention of the first patent was developed as a result of this experience, in the effort to solve the recognized defects of the prior methods of pavement construction.

After Mr. Hassam obtained his principal patent, May 1, 1906, he resigned from the employ of the City of Worcester, June 23, 1906, and interested some business men in himself and in his inventions. The complainant, Hassam Paving Company, was formed on the basis of Mr. Hassam's patent, and efforts were commenced to introduce the pavement on its merits.

The pavement turned out to be a great success. When Mr. Hassam testified in June, 1912, after about five years of business, Hassam pavement had been adopted in more than sixty cities in the United States and Canada, reaching from Portland, Oregon, to Portland, Maine (A. 8, page 84). Over three million yards had been laid, representing over six million dollars' worth of road construction. Its durability and low cost made it of great value (page 83).

A striking illustration is the Long Island Motor Parkway built for William K. Vanderbilt Associates, which is familiarly called "the Vanderbilt Race Course." Hassam pavement, after investigation by the Vanderbilt engineers of all kinds of constructions suitable for the great wear and tear of automobile racing, was adopted without competition (Hassam, A. 14–16, page 86).

Hassam pavement has been laid in locations where it has been impossible to use other kinds of pavements (Hassam, A. 12, page 85). It is standing up to automobile traffic better

than any pavement known for the price (Hassam, A. 13, page 86).

Mr. Thomas, the treasurer of the Hassam Company, testified in rebuttal, that the business of the Hassam Paving Company and its licensees is increasing very rapidly. The business of the Hassam Paving Company more than doubled during the year 1913. The Connecticut Hassam Company quadrupled its business. The State of New York in 1913 adopted Hassam pavement for seventy-five miles of state highway. The State of Maine has adopted and is using it. No such success as this could be achieved in five years unless Hassam pavement filled a long felt want.

Over a million dollars has been invested by the Hassam Paving Company and its subsidiary companies to carry on the business of laying Hassam pavement (pages 251-252).

This investment and introduction of the invention into public use has been made by reason of the patents granted by the United States Government. The introduction of the Hassam pavement has given municipalities a better and cheaper pavement for roads having heavy traffic than they ever before had. These municipalities have been glad to adopt the Hassam pavement at the price asked in competition with all other kinds of pavement. Hassam pavement has taken its place in the world as a new kind of pavement and its merit is universally recognized. The patents in suit took nothing away from the public, which was understood or practiced before. Mr. Hassam's inventions have assisted greatly in solving the difficult problem of constructing cheaply, a pavement which will stand heavy teaming and automobile traffic.

Hassam pavement is well adapted for cities and suburbs having heavy traffic on their roads and where the soil or geological formation is soft and porous.

Hassam pavement was introduced into the City of Portland, Oregon, and was found particularly well adapted to the

needs of that city. In the year 1908, one-half mile was laid; in the year 1909 four miles were laid; in the year 1910 thirteen miles were laid, and in the year 1911 twenty-nine miles were laid, or in other words, forty-six and one-half miles, representing 788,000 square yards were laid in the City of Portland in four years (Record, page 303, A. 22, page 88).

As it is difficult to handle a pavement business by one company, Hassam pavement has been introduced by organizing licensee companies who are given the exclusive right to use the patents under royalty for certain territory. The Oregon Hassam Paving Company, co-complainant, was organized for this purpose and has the exclusive license under the Hassam patents for the State of Oregon and part of the State of Washington. It pays 15c. per square yard as royalty on Hassam pavement (page 277).

The bill, Paragraph XXIII., charges the defendants generally with infringement of said patents in the City of Portland. Paragraph XXIV. alleges that the defendants have been notified of their infringement and that they have continued after such notice to infringe the three patents. Paragraphs XXV., XXVI. and XXVII., charge a particular infringement by these defendants in laying Hassam pavement in Commercial Street in the City of Portland. Paragraph XXVIII. charges a disturbance of the relations between the City of Portland and complainants by reason of threats of defendants to commit further acts of infringement.

The facts concerning the particular act of infringement are as follows: The Council of the City of Portland on April 7, 1910, by an ordinance, signed by the Mayor on the fourth day of May, 1910, approved Hassam pavement and it was provided by said ordinance that said Hassam pavement when laid on the streets of the City of Portland should be according to certain specifications (pages 19–22). These specifications are the identical specifications which complainants have evolved from experience to practice the inventions of the

three patents in suit. In February, 1911, said City Council adopted a resolution declaring its purpose to pave Commercial Street in said city with Hassam pavement and said specifications and notice were published, posted and advertised as required by law. No remonstrance or petition against such ordinance or intended improvement was encountered. As the by-laws of the City of Portland are drawn, any contractor or concern interested in the paving business could have come forward at this time and offered its own pavement if it desired to obtain the job. Neither defendants nor any one else did this. The contract was then advertised for the lowest bidder and in the contract it was particularly specified that "Hassam pavement" was to be laid. The defendant, Consolidated Contract Company, then came forward and underbid complainants and obtained the contract for laying the Hassam pavement in Commercial Street. The defendant, Pacific Coast Casualty Company, is a bonding company which backed up the Consolidated Contract Company in obtaining the contract to lay Hassam pavement in Commercial Street.

Defendants then went ahead and laid Hassam pavement in defiance of the patents and complainants' interests, and without making any arrangement with complainants for a license.

The answer attempts to justify said particular infringement on the allegation that the Consolidated Contract Company has a license to use complainants' patents without royalty, because the City of Portland was led by the Oregon Hassam Paving Company to specify that Hassam pavement could be laid within the municipality and that the ordinances of the City of Portland require that all paving contracts shall be given to the lowest responsible bidder, and that it obtained the contract by underbidding complainants. By appropriating complainants' patents and by refusing to pay royalty, of course defendants can underbid complainants.

The Consolidated Contract Company knew that it was figuring on Hassam pavement because Hassam pavement was

called for by name in the specification (page 29). If this defendant wanted the job, it should have specified a pavement of its own and objected when the specifications of Hassam pavement were published for approval for Commercial Street. If it wanted to figure on laying Hassam pavement, it should have arranged with the owners of the patents for a royalty.

If the contention that the City of Portland has a license under the Hassam patents, and that the defendants can seek refuge under such license is maintainable, there would have been nothing left for the Court to have done but to have ordered the defendants to pay over the royalties to complainants, because a defendant justifying under a license cannot question the validity of the patents.

Kinsman vs. Parkhurst, 18 Howard, 289.
United States vs. Harvey Steel Co., 196 U. S., 316.

It would be preposterous to allow defendants to justify under an existing license and escape the payment of royalties due under the license by attacking the validity of the patents.

Moreover, infringement of a patent is not a damage that can be measured in dollars and cents. An infringement not only deprives the complainant of the business which belongs to it under the patent, but may ruin the good-will of the business and encourage others to infringe.

Warren Bros. Co. vs. City of Montgomery, 172 Fed., 414–423 (Circuit Court, M. D., Alabama, N. D., August 9, 1909).

Jones, District Judge :

> " nor can complainant be turned out of the equity court here, on the theory that, having established a royalty, a recovery at law will be adequate compensation, and the injury cannot be irreparable in such sense as to give it a standing in a court of equity. Irreparable injury, in the sense here used, does not necessarily mean that complainant will be ruined or grieviously harmed, if the court of equity does not intervene, but only that some legal right of complainant will be

illegally taken from it, which in equity and good conscience, it is entitled to enforce, the proper and full enjoyment of which will be impaired or lost, if the court of equity declines to interfere and puts complainant to its action at law for damages.

"A large element in bringing a patent into use and giving it a market value is the estimate of the public as to its utility, and whether persons who deal in the process or manufacture believe the same result can be effected under another process, to be had by dealing with other parties at less cost. The completed work here would advertise itself, in most effective form, as a pavement of equal merit to that covered by the Warren patent, laid down and used in defiance of the rights of the patentee, in the capital of the state, where it would inevitably attract attention as the work of a competitor who offers to furnish the process at less cost than it could be had under the patent. At this time, perhaps, more than at any other period, states and municipalities are concerned in building roads and streets and as to the best methods of construction. It is difficult to see how far the failure of complainant to seek injunctive relief to prevent the building and use of such pavement would affect the value of its patents or diminish the number of licenses to use it. The reputation of a patent, like the good name of an individual, is easily injured, and it is hard, no matter how wrongful the injury, to counteract its effect. An ounce of prevention is worth a pound of cure. The full damage which might be inflicted upon the patentee, under such circumstances, if the patent be in fact infringed, is largely speculative, cannot be accurately ascertained, and, therefore, cannot be recovered at law. Equity alone can give an adequate remedy."

Judge Bean aptly disposed of this preliminary question as follows:

"The fact that the city of Portland saw fit to specify Hassam pavement for one of its streets at the request

> of the holder of the patent, does not excuse one who underbid the owner of the patent for an infringement thereof any more than if the owner of a rock quarry should induce the city to specify rock for use in a street of a quality to be obtained only from his quarry would justify the successful bidder in appropriating the rock without paying for it."

This preliminary defense raised by the defendants is also immaterial in view of the proofs. During the taking of the proofs, it appeared that not only has the defendant, Consolidated Contract Company, laid Hassam pavement on Commercial Street, in the city of Portland, but that it has laid 28,950 yards of Hassam pavement on Milwaukee Street, a stretch on Gantebein Avenue, a piece on Union Avenue, and a short piece of five or six blocks on East Yam Hill and Macadam Street (page 189). The stretch on Gantebein Avenue was completed before this suit was commenced (page 190).

Said defendant does not attempt any specific justification for its infringing acts on any street outside of Commercial Street. The infringement on Gantebein Avenue was completed before the bill of complaint was filed. Union Avenue, East Yam Hill, and Macadam Street were laid with Hassam pavement, commencing before, and continuing during the progress of this litigation.

The defendant, Consolidated Contract Company, therefore, is a rank infringer, and has continued its acts of infringement just as long as it could until enjoined in this case. Not only has it taken complainants' patents, but it has appropriated its name and good-will and held out that it was prepared to lay " Hassam pavement."

This defendant has been guilty, not only of patent infringement, but of unfair competition in trade.

Defendants' main defense is ~~on~~ an attack on the validity of the patents in suits based on old patents, publications and alleged prior uses, a large part of which evidence relates to

descriptions of roads which on test proved to be utterly impracticable and which have been forgotten, and which patents, publications and abandoned experiments are now resurrected by the defendants to enable them to have some handle to their argument, that the meritorious patents involved in this controversy should be confiscated.

This defense, which the infringer so often endeavors to employ as a harbor of refuge, as presented in this case involves a fundamental fallacy. There is no allegation that any one of these prior patents, prior publications or alleged prior uses, *in itself*, constitutes an anticipation of any claim of either of the three patents in suit. The argument is that the Court can find one step or element in one publication, another step or element in another piece of evidence, and so on, and that there would be no invention in combining the various elements or steps in one combination or to make one pavement. Such a defense often carries and certainly does carry in this case, its own refutation. All the prior patents urged by defendants have expired, except the Warren patent on bitulithic pavement, which is not at all like the pavements in controversy. All the concrete pavements of the prior art are open to defendants' use, but defendants pay complainants the compliment of using Hassam pavement and not the prior art pavements. Defendants' conduct, therefore, constitutes cogent evidence in support of the *prima facie* validity of the patents in suit.

Heinz Co. vs. Cohn, 207 Fed. Rep., 547–560, C. C. A., 9th Circuit:

> " Beyond this, the presumption of novelty attending the issuance of letters patent, the general and extensive use to which the new device is applied, and *further the use persisted in by one infringing the device are all evidence of the product of inventive faculty and genius.* Diamond Rubber Co. vs. Consol. Rubber Tire Co., 220 U. S., 428, 31 Sup. Ct., 444, 55 L. Ed., 527; A. R.

Milner Seating Co. v. Yesbera, 133 Fed., 916, 67 C. C. A., 210; Buchanan v. Perkins Electric Switch Mfg. Co. 135 Fed., 90, 94, 67 C. C. A., 564; Morton v. Llewellyn *et al.*, 164 Fed., 693, 90 C. C. A., 514."

A decision against the validity of the patents here in suit will make complainants' large investment of no value. Before any court will strike down and declare the patents in suit invalid and void, to the use of an infringer, it must be satisfied beyond reasonable doubt that the defendants are right. The patent laws of the United States were founded and enacted to encourage just such inventions and developments as complainants' rights represent in this case.

San Francisco Cornice Co. vs. Beyrle, Circuit Court of Appeals, Ninth Circuit, 195 Fed. Rep., 517.

> " With respect to the first defense, the rule is that the burden of proof is upon the defendant to establish this defense, for the grant of letters patent is *prima facie* evidence that the patentee is the first inventor of the device, or the discoverer of the art or process, described in the letters patent and of its novelty. Smith v. Goodyear Dental Vulcanite Co., 93 U. S., 486, 489, 23 L. Ed., 952; Lehnbeuter v. Holthaus, 105 U. S., 94, 26 L. Ed., 939. Not only is the burden of proof to to make this defense upon the party setting it up, but it has been held that *every reasonable doubt should be resolved against him.* Cantell v. Wallick, 117 U. S., 689, 695, 6 Sup. Ct., 970, 29 L. Ed., 1017."

The Proofs.

Complainants endeavored to assist the Court in every way to a correct understanding of the issues. In the opening proofs, Mr. Hassam was called to the stand and explained succinctly the details of his invention. Harold Parker, probably the most eminent authority on road construction, was called and explained clearly the differences between the

Hassam pavement and the old pavements. Mr. Parker was formerly Chairman of the Massachusetts Highway Commission. He built all the State Highways in Massachusetts. He is now first vice-president of the Hassam Paving Company. He resigned from the Massachusetts Highway Commission and became connected with the Hassam Paving Company, because from experience he was satisfied of the superiority of the Hassam pavement (page 106).

Defendants, in proving the prior art, simply dumped four prior patents and seven excerpts from dictionaries, encyclopedias, text books and publications in evidence and called certain witnesses in the attempt to show prior uses. No expert was called to explain these patents or printed publications or alleged prior uses.

Complainants, in rebuttal, had the well known expert, Arthur S. Browne, discuss these prior patents and publications and prior uses, and show where they are absolutely immaterial and without relevancy to the patents in suit; and also had Professor French of the Worcester Polytechnic Institute conduct a series of tests to determine the strength of the Hassam pavement foundation to resist crushing strains and also bending strains, as compared with the strength of cement concrete previously employed in road building.

As defendants' contentions, with regard to the validity of the patents in suit based on these prior patents and publications, are not clearly brought out in the evidence, considerable discussion of these matters seems necessary.

Road Construction.

Speaking generally, a road is made of two parts.

First, a foundation designed to carry the load, that is, to resist the crushing and bending strains of traffic; and, second, a top or wearing surface formed or placed on said foundation and designed so that the feet of horses can engage the same

and so that at the same time the wheels of vehicles will pass easily thereover.

A new factor has recently been encountered, because roads have to be designed so that the wheels of automobiles will obtain a grip or traction on the wearing surface, which at the same time must allow a smooth passage of the automobile, but not be slippery enough to allow side skidding.

Road Classification.

Speaking generally,roads may be divided into three classes. First, ordinary dirt or country roads ; second, Macadam or loosely united stone roads ; and third, pavements.

I. The Ordinary Dirt Road.

The ordinary dirt road is made by grading or levelling a road with materials directly at hand and usually rolling the same. These roads are generally prototypes and their improvement and condition represent the progress reached by the community in which they are found. They need not be discussed in this brief.

II. Macadam or Loosely United Stone Roads.

This class of roads is constructed of broken stone and the principle employed is entirely a mechanical binding of the pieces of stone together. This road was devised by a Scotchman and is named after its inventor. It is well described in the article read into the record, on page 156, from the Century Dictionary :

> " Macadamization :
>
> " The process of laying carriage roads according to the system of John Loudan Macadam, Scottish engineer (1756–1836), who carried it out very extensively

in England. In the common process the top soil of the roadway is removed to the depth of 14 inches. Coarse, cracked stone is then laid in to a depth of seven inches and the interstices and surface depressions are filled with fine cracked stones.

"Over this is placed a bed laid seven inches deep of road metal or broken stone of which no piece is larger than two and one-half inches in diameter. This is rolled down with heavy steam or horse rollers and the top is finished with stone crushed to dust and rolled smooth."

From the above description, it will be seen that the stone particles are held together mechanically and that the structure depends for its stability upon the dust and fine particles of stone being forced into the spaces between the pieces of stone, something like the way a stone wall is built up in a pasture, of large pieces of stone, with little pieces inserted in the spaces.

An interesting discussion of the theory of the construction of this road is found in Baker's Treatise on Roads and Pavements, extracts from which were read into the record (pages 168–181). Baker states as follows (page 170) :

> "The inference drawn from such results would be that cementation in such materials is to a considerable extent mechanical,—that is, the interlocking of the fine particles of dust caused by pressure."

Any binding action which occurs is extremely slight. Baker compares it to the "drying up of particles of water on clayey soil."

Baker further describes the binding as follows (page 171) :

> "This binding action is quite slight, but may have an appreciable effect in maintaining the delicate adjustment of a broken-stone road."

A modified form of Macadam road is known as Telford. A Telford road consists of a foundation formed by first laying

heavy flags or stone in the road bed and then placing a Macadam road on such foundation. A Telford road is described on page 158 of the record as follows :

> " The turnpike roads were generally managed by ignorant and incompetent men until Telford and Macadam brought scientific principles and regular system to their construction and repair. The name of Telford is associated with a pitched foundation, which he did not always use, but which closely resembled that which had been long in use in France, and the name of Macadam often characterizes roads on which all his precepts are disregarded. Both insisted on thorough drainage and on the use of carefully prepared materials, and adopted a uniform cross section of moderate curvature instead of the exaggerated roundness given before; but, while Telford paid particular attention to a foundation for the broken stone, Macadam disregarded it, contending that the subsoil, however bad, would carry any weight if made dry by drainage and kept dry by an impervious covering."

It is obvious that the slight mud-puddle binding obtained in a Macadam road would not be of much use in a road which has to stand heavy traffic. A Macadam road is well adapted to long stretches in the country, where it is desired to construct a stone road cheaply. There are many miles of such roads in use in England and the United States, but it will be found that such roads are rarely carried into cities and suburbs where heavy traffic is conducted and where the Hassam pavement has remarkably fitted in. A Macadam road has little bearing on the issues of this controversy, but is interesting as a matter of history.

III. Pavements.

As the term " pavement " is usually employed, it has relation to a road made of stone or brick or wooden blocks, or

solid structures. Such roads are designed for the heavy traffic encountered in cities, suburbs, main or state highways, and places where the ordinary country or dirt roads and Macadam roads will not serve.

Pavements may be divided into three general types :

First, a pavement consisting of blocks of stone, brick or wood laid on the road with only a light, or practically no foundation under them. These pavements are usually found to be the first attempts of cities and municipalities to build streets to stand heavy traffic. After use they are usually found to be rough, uneven and poor. They are being rapidly replaced throughout the United States. They have little bearing on this controversy.

Second, a pavement constructed of cement concrete ; that is, of small pieces of stone permanently united and held together by cement. This litigation relates to a pavement made of cement concrete.

The first Hassam patent relates in particular to a new cement concrete foundation for a pavement, upon which foundation a suitable wearing surface is placed. The second patent relates to an improvement in the process of constructing said foundation. The first three claims of the third patent relate to a pavement having the improved cement concrete foundation and an improved wearing top surface united therewith ; and claim four covers the process of building the complete pavement.

Third, pavements made of bituminous compounds.

Bitumen is a mineral pitch, which will become plastic *under heat*, and some varieties of which will burn. Bitumens vary greatly in consistency from liquid naphtha to solid asphaltum. A pavement made of bitumen is often spoken of as an "asphalt pavement."

It is desired at this point to emphasize the distinction between a *concrete* pavement and a *bituminous* pavement. Con-

crete consists of pieces of broken stone held together by cement. The stone gives the structure its strength. The cement binds the pieces of stone together. The larger the proportion of stone employed in a given thickness, provided the binding action of the cement is perfectly retained, the stronger will be the concrete. The making of concrete depends upon the setting of the cement, which is a process of hydration, or a chemical action. It has no relation at all to heat. Concrete can be made at any temperature above the freezing point. A perfectly made concrete pavement has the same density at all temperatures.

A pavement made out of bituminous compounds is very different, both structurally and chemically. Bituminous compounds are mixed in hot condition and set into a solid condition by cooling. *Heat* is the essence of the use of bituminous compounds. The difficulty of working sticky, hot bituminous compounds, or tars or pitches with broken stone will be obvious upon reflection. While, of course, good pavements are made out of bituminous compounds, for certain uses and locations, particularly where strength is needed, they are not comparable with Hassam pavement. In hot weather, a bituminous pavement will become soft. The feet of horses will spoil the surface thereof, and narrow tires will cut it up. Traction on a warm bituminous pavement is increased as the wheels sink into it. Moreover, bituminous compounds have in themselves an element of destruction, in that the ingredients tend to crystalize and undergo chemical disintegration, and thus bituminous compounds after a certain time become non-efficacious to keep the structure together.

On the other hand, perfect concrete is a structure which will last beyond the uses of man. The concrete in the Coliseum at Rome is said to be stronger to-day than when built.

The patents in suit are directed to the problem of making

a *perfect* cement concrete pavement, as distinguished from a bituminous pavement. Mr. Hassam says in his first patent :

> " I have found that roads made of bituminous compounds after a certain period disintegrate, and are expensive to repair. * * *
>
> " No bituminous material is used in my method of construction of road, but only broken stone or gravel, sand and cement."

The case best can be considered by presenting the subject matter entirely within its proper confines. The ordinary country roads and the Macadam roads have nothing in common with the subject matter to be discussed.

Foundations and pavements made out of bituminous compounds worked hot can also be disregarded, as they are not at all relevant.

The case at bar is concerned entirely with a cement concrete foundation and with a pavement having a cement concrete foundation and an improved wearing surface.

Therefore, the patents in suit will be considered in connection with the relevant prior art.

The Ordinary or Old Cement Concrete Road Foundation.

The method employed for making a cement concrete foundation for a road, before the invention of the patents in suit, is well described by Professor French in his Answer 3, page 240 :

> " A. If the concrete is to be mixed by hand, the ordinary method employed is to put the desired amount of cement and sand on a mixing board. These may be mixed together dry, but more usually this mass is soaked with water and thoroughly mixed with shovels. Then the desired amount of crushed stone is added and the mixing is continued by shoveling until each piece

> of stone is coated as nearly as possible with cement, sand and water. Sometimes a machine mixer is employed in which the cement, sand, rock and water are put in together and then the ingredients mixed to get the same result, namely, as thoroughly as possible coating of the broken stone with mortar composed of cement, sand and water. This material prepared in this way is then shoveled on the roadbed and given the desired grade and level. Sometimes it is simply spread and left on the road. In other instances it is tamped by workmen using hand tampers. I have never seen a steam roller employed for this purpose and believe great difficulty would be found in attempting such a step, owing to the slippery, unstable condition of the mass. The mixture is allowed to stand in the roadbed the necessary length of time, usually a number of days, until it sets into a hard, so-called concrete."

In brief, the old method consisted in coating the broken stone with cement and sand in a trough or in a mixer at one side of the road, then taking the coated stone, placing it on the road and tamping or ramming the same by hand.

This process led to a very inferior cement concrete. The Court can well understand that the pieces of stone might not be properly coated with cement, that the cement is partially set before the coated stone is put upon the road, and that there is no surety that the voids are filled up. Moreover, this old process was expensive, as the stone had to be handled twice, namely, once to coat the same with cement and sand, and a second time on the road. The use of cement concrete for pavements, prior to Mr. Hassam's inventions was rare.

This is clearly explained by Mr. Parker (Page 100) :

> " The reason that I hold this view is that from the nature of things a concrete mixed either by hand or by machine, in the very act of handling, must, owing to the different specific gravity of its ingredients, be more or less separated into its component parts and that therefore, ordinary concrete hauled out and dumped

onto the road is actually separated by the act itself and therefore cannot be uniform in its structure.

" Further, the stone composition or concrete placed on the road and tamped with an ordinary hand-tamper is not, and never can be, uniformly solid in its structure, and many weak places necessarily develop because of the different comingling of the ingredients. This results in an uneven surface and the destruction of the road more or less rapid, according to the skill of the persons laying the concrete.

" Furthermore, it is impossible to lay concrete in the ordinary way, in thin layers on a road, and get the surface smooth and satisfactory."

(See also page 102).

" x-Q. 12. That is, you mean by mixing the concrete on the ground and tamping it or rolling it ?

" A. I mean the ordinary method of laying concrete, which is to mix by hand or machinery and tamp it also by hand.

" x-Q. 13. Would it not be practical to mix on the ground by having a sufficient force of men for that purpose, and to follow up immediately with a heavy roller and roll the concrete instead of tamping it by hand ?

" A. My judgment is, and that is based upon observation, that hand-mixed concrete placed upon the road and rolled with a roller is absolutely unsatisfactory.

" x-Q. 14. Would it be any better if it were machine mixed and then rolled with a heavy roller ?

" A. No, sir."

The imperfection of the ordinary cement concrete pavement is not at all disputed and is clearly stated in Mr. Hassam's first patent (page 1, lines 26–55).

" Roads constructed of concrete or *stone and cement* mixed before they are laid also crumble and break up in time because the presence of the partly-hardened

cement between the stone when the mixture is laid prevents the stone from being brought close together by compression, but causes comparatively large cement-filled voids to be left between said stone, and said cement soon disintegrates because it was necessarily disturbed in setting by the mixing operation. It is a well-known fact that if cement is left undisturbed until it has entirely set it will be very strong and durable ; but if it is mixed or otherwise disturbed during the time it is setting it will not last. It is therefore essential that the cement used in the construction of roads and pavements be handled and mixed as little as possible and that it be used or laid as soon as possible after it has been mixed. Owing to the employment of unskilled and careless workmen for laying concrete pavement the mixture of stone and cement is often handled more than is necessary, and it is often not laid for a considerable time after it has been mixed. The result is that the majority of this kind of road or pavement laid is even less durable than it would be if constructed under the best circumstances."

The above described method was the ordinary method of making cement concrete, whether used for streets, buildings, bridges or other structures. For reasons given by the witness, it was not satisfactory as a foundation for streets, its structure was insufficient, it was expensive to lay, and although the value of cement concrete was well known, it was used very little for pavement before the inventions of Hassam Pavement.

The First Hassam Patent.

The first Hassam patent, No. 819,652, covers certain new and useful " Improvements in Pavements and Processes of Laying the Same," and at the outset the patent says :

" My invention relates to the making of stone or gravel roads or pavements, and it consists of an im-

provement in the method of making such roads or pavements, as hereinafter described, and particularly pointed out in the claims.

"The object of my invention is to construct a cheaper, more durable, and for many purposes a more efficient road than has hitherto been constructed of broken stone or mixed stone and bituminous or other cement." (Page 1, lines 13–23).

The specification then refers to the disadvantages of bituminous pavements and ordinary cement concrete pavements, and then describes the Hassam pavement foundation as follows:

"No bituminous material is used in my method of construction of road, but only broken stone or gravel, sand, and cement. The street is first dug out to the proper depth for the sub-grade, which is rolled, if needed. Broken stone or gravel is then spread to a proper depth and rolled with a steam-roller or compressed by any suitable means until the voids between the stone are small and the surface even. It will be noted that as there is no coating of cement, bituminous, or other material on the pieces of stone they can be compressed very close together and solid, and the voids left between them will be extremely small. When the stone or gravel has been compressed to the desired closeness and firmness, it is grouted with a mixture of cement, sand, and water, which may not be prepared until immediately before it is to be used, and which does not require excessive handling, like the mixture for concrete, and therefore does not suffer from being handled by careless workmen. All the voids are filled with cement in the grouting operation" (Page 1, lines 56–80).

In accordance with this described mode of operation, it will be noted: (1) that uncoated broken stone or gravel is employed for the foundation; (2) that this uncoated broken stone is spread to the proper depth directly on the road bed

and is then rolled with a steam roller, or otherwise compressed until the voids or vacancies between the stones are made very small ; and (3) after the stone has thus been compressed, it is grouted by pouring a mixture of *cement, sand and water* over the same, which flows into the small voids or vacancies between the broken stone, so that they are filled and the crushed stones thoroughly united.

The specification then goes on to describe the application of a suitable surface to the foundation. It states that after the cement has stood and grown hard and a solid foundation has been obtained, brick, stone or wood block may be placed on the cement to form a wearing surface. It states, however, that it is preferred to make the surface by means of a thicker grout of cement, sand and water and fine broken stone or gravel, the stone or gravel being rolled into grout while it is still green.

The road or pavement which is thus prepared is defined in claim one of this first Hassam patent, as follows :

> "1. A road or pavement consisting of *a bottom layer of hard-rolled uncoated* stone, a *grouting of cement* placed upon said stone and *filling all the voids therein*, and a suitable surface placed on said grout." (Italics added.)

It will be noted, that this claim specifies the particular characteristic of the foundation, including the hard rolled uncoated stone, and the grouting of *cement* filling the voids ; and that it broadly recites the wearing surface, defining it simply as a " suitable surface placed on said grout."

In other words, the " suitable surface " of the claim may be any of the surfaces such as are specifically referred to in the specification, namely, of brick, stone or wood block, or of the fine stone or gravel mixed with a grout of cement, sand and water. The claim is directed to the specific foundation combined with a suitable wearing surface.

The advantages of the Hassam cement concrete foundation are of the utmost importance and are as follows :

First, the entire operation of making the same is conducted directly on the road, no trough, or mixing by labor, or machine mixing being necessary.

Second, as the broken stone is compressed and forced together in clean condition, as thoroughly as possible *in situ*, much more stone relatively to the cement is obtained in the concrete, than by the old method, and hence Hassam concrete is the strongest known.

This rolling with a steam roller, or compression of the naked stone until the voids are small, is an entirely different thing from ordinary hand tamping which merely packs the pieces of stone together. Hard rolling or compression breaks down the sharp edges of the stones and reduces the voids so that they will be extremely small. This step involves a positive compression and breaking down of the pieces of stone on each other.

The effect obtained by this rolling or compressing of the uncoated, naked stone can be realized from the figures.

> "Broken stone material contains about 55 per cent. of solid stone to 45 of void space (page 160).

In building the Hassam foundation, a layer of eight inches of uncoated, broken stone is laid on the road. This is rolled and compressed by a heavy steam-roller until it is six inches in thickness. This involves a reduction of twenty-five per cent. in thickness, and as the only way reduction can take place is by reducing the voids, it will be seen that this action reduces the voids over half, or substantially from forty-five per cent. to twenty per cent.

Third, the grout employed is a mixture of *cement, sand and water* about like soup, which can be poured over the crushed stone very expeditiously and rapidly and will com-

pletely fill the voids left in the stone after rolling. This is done without heating. Substantially, a monolith or a solid stone is built in the street, better even than Nature builds rock.

After the pavement is made, the same is allowed to solidify simply by standing. The cement sets by chemical action and the whole mass is solidly united. The chemical setting action of the cement is a process of hydration, that is, the cement absorbs and chemically unites with a certain amount of the water and solidly binds the pieces of stone together. Heat or temperature performs no function in this hydration. A cement concrete pavement is practically a solid stone and temperature changes do not affect thereafter its stability. Hassam pavement does not become plastic, or warp, or disintegate, during hot weather.

Mr. Hassam's discovery in substance is that a foundation layer of uncoated, clean, broken stone, crushed so that the pieces of stone are in very intimate contact and the voids between the pieces of stone very small and minute can be bound together by a liquid grouting filling these voids, whereby a concrete foundation is produced several times stronger than ordinary concrete. This result is obtained because strength is given to the structure by the crushing of the stones together so that the pieces are inherently stable and in intimate contact and because there is a large percentage of stone in the layer. The little minute voids left between the pieces of stone after the crushing operation are completely and thoroughly filled with the thin grout of cement, sand and water, and the *relatively weak binding character* of the grout is not material because there is no void or space of any size to be filled and the use of grout is many times compensated for by the inherent stability of the pieces of stone crushed upon each other and the relatively great percentage of stone in the layer.

In short, the stone is used for strength and the grout prac-

tically only for binding, which function it performs perfectly by reason of the small size of the voids or spaces between the stones.

To state a homely analogy for illustration, a carpenter gluing two boards together always presses them into intimate contact, so that there is as little glue as possible between the boards, whereby the boards are used for strength and the glue simply for binding purposes. If there should be half an inch of glue between the boards, the structure would be weak.

Mr. Hassam's conception that a concrete foundation could be given strength by increasing the proportion of stone by rolling, and that cement grout could be most advantageously employed for binding, by reason of the resulting small size of the voids, has revolutionized concrete paving.

That a *perfect* concrete pavement could be made by placing a layer of clean, uncoated, broken stone on the road-bed, crushing the same with a steam roller so that the voids will be brought to a minimum and as much stone as possible obtained in the layer, and then pouring a thin liquid grout made up of cement, sand and water thereon so that the grout will permeate and fill the small voids, whereby upon setting, a perfect concrete foundation will be built in the street, which foundation is much stronger than ordinary concrete, and upon which foundation a suitable wearing surface can be placed to make up the complete pavement, was a phenomena which was at variance with the teachings of all text-books and engineers skilled in concrete construction.

Grouting, generally, was a discredited, discarded step, never used if anything else were available, and condemned because the previous results obtained thereby were such that the resulting structure was so unstable and had such inherent weaknesses that it could not be relied upon, as the thin character of the grout gave a weak cementing effect if placed in holes or voids of any size.

Baker states in Volume I, page 136, of his Concrete Construction as follows :—

> " Grout. This is merely a thin or liquid mortar of lime or cement. The interior of a wall is sometimes laid up dry, and the grout, which is poured on top of the wall, is expected to find its way downwards and fill all voids, thus making a solid mass of the wall. *Grout should never be used when it can be avoided.* If made thin, it is porous and weak ; and if made thick it fills only the upper portions of the wall. To get the greatest strength, the mortar should have only enough water to make it a stiff paste—the less water the better." (Italics ours.)

But Mr. Hassam left all precedent behind and discovered that a grout of cement, sand and water could be advantageously employed for a pavement foundation, if small, uncoated, sharp, broken stones were first crushed by a roller and then the cement grout poured in the resulting small voids. Mr. Hassam's invention involved the striking out along a pathway, which had been previously avoided by all concrete engineers.

The Hassam cement concrete foundation is simplicity itself. It is easy to say that it simply consists of a cement concrete made out of small broken stone, by first crushing the same in an uncoated condition and then pouring a grout of cement, sand and water to fill the resulting small voids. Compressing stones by a roller of course was old, and grouting with cement itself of course was old, but no one, prior to Mr. Hassam, saw that a cement concrete foundation for a pavement could be made by combining the two steps in the order stated so that a solid cement concrete foundation would be obtained suitable for receiving a wearing surface. In short, Mr. Hassam's process brought success out of what had heretofore been a failure in road building, namely, the devising of a *cement concrete* foundation for pavement.

By the testimony of Professor French, the Hassam cement

concrete foundation is thirty-three per cent. stronger to resist bending strain, and forty-two per cent. stronger to resist crushing strain, as compared with the ordinary cement concrete. These are the substantial strains a pavement or pavement foundation is put to (Page 245).

The claim of the first Hassam patent covers a new cement concrete pavement foundation made out of old materials in a new way to form improved structure or product. It is the kind of a claim that has been repeatedly approved by the Court, as will be pointed out in connection with patents on pavements which have been before the Courts.

Lamb Knit Goods Co. vs. Lamb Glove and Mitten Co., 120 Fed., 272 (Circuit Court of Appeals, Sixth Circuit) :

> " If it is a useful article, and is new, it is the proper subject of a patent, provided it involves invention to produce it. Gibbs v. Hoefner (C. C.), 19 Fed., 323 ; La Rue v. Electric Co. (C. C.), 31 Fed., 82 ; Seymour v. Osborne, 11 Wall., 516, 549, 20 L. Ed., 33.

The Second Hassam Patent.

The Second Hassam patent, No. 851,625, so far as concerned in this case, is directed to a particular improvement in the method of making the foundation of the first Hassam patent, No. 819,652. Briefly stating, the improvement is as follows :

In building the pavement foundation of the first patent by pouring grout of cement, sand and water on the uncoated, crushed or rolled, broken stone, it was found that air bubbles were apt to be trapped in the foundation. As it is the purpose of the inventions to get as strong a foundation as is possible within a given space, after considerable experiment, Mr. Hassam found that this difficulty could be obviated by agitating or disturb-

ing the layer of crushed, uncoated, broken stone during the process of grouting, until the grout should flush up to the surface, whereby all the voids or spaces between the stone would be absolutely filled with grout and the air traps eliminated.

At the outset the specification of the second Hassam patent states:

> "My invention relates to a process of constructing stone or gravel roads or pavements and it is designed particularly as an improvement on my previous invention patented May 1, 1906, No. 819,652" (Page 1, lines 12–16).

The specification then describes the difficulty previously encountered by Mr. Hassam in distributing the grout of cement, sand and water, so that air would not be left in the voids or spaces in the layer of crushed, naked stone, and states the particular object of the invention is—

> "to lay the ~~payment~~ pavement and particularly the grout in such a manner that all the voids in the stone layer will be filled therewith and no holes will be left in the surface" (Page 1, lines 36–40).

This is accomplished by agitating the cement grout after it is placed upon the stone, so that the air is allowed to escape and all voids filled with grout. As stated in the specifications, for the purpose of agitating the grout, a steam roller is preferably employed "which may be the same used for compressing the stone." This agitating the mass of crushed stone to expel the air so that the grout of cement, sand and water will fill all the voids, is the distinguishing improvement, as compared with the first Hassam patent, and is covered by claim 2.

> "2. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids are small, grouting with a mixture of cement, sand and water,

agitating the mass to expel the air and fill the voids between the stone with said grout, and placing a surface on the mass thus formed" (Italics ours.)

Law on Process Claims.

Process or method claims of this character have been repeatedly sustained by the Courts:

Tilghman vs. Proctor, 102 U. S., 707:

The patent in this case involved the discovery that fat could be dissolved into its free fat acids and glycerine by placing the fat in water, by bringing the water to a high temperature, 400 to 612 F., and by keeping the same under sufficient pressure to prevent the formation of steam, by which process the glycerine and fat acids separated from each other by reason of their different specific gravities.

The claim was

> "the manufacturing of fat acids and glycerine from fatty bodies by action of water at a high temperature and pressure."

The Court sustained this patent as a proper process, saying:

> "That a patent can be granted for a process there can be no doubt. The patent law is not confined to new machines and new compositions of matter, but extends to any new and useful art of manufacture. A manufacturing process is clearly an art, within the meaning of the law."
>
> * * * * * * *
>
> "A process is an act, or a mode of acting. The one is visible to the eye; an object of perpetual observation. The other is a conception of the mind, seen only by its effects when being executed or performed. Either may be the means of producing a useful result. The mixing of certain substances together, or the heat-

ing of a certain substance to a certain temperature, is a process. If the mode of doing it or the apparatus in or by which it may be done is sufficiently obvious to suggest itself to a person skilled in the particular art, it is enough, in the patent, to point out the process to be performed, without giving supererogatory directions as to the apparatus or method to be employed. If the mode of applying the process is not obvious, then a description of a particular mode by which it may be applied is sufficient. There is, then, a description of the process and of one practical mode in which it may be applied. Perhaps the process is susceptible of being applied in many modes and by the use of many forms of apparatus. The inventor is not bound to describe them all in order to secure to himself the exclusive right to the process, if he is really its inventor or discoverer. But he must describe some particular mode, or some apparatus by which the process can be applied with at least some beneficial result in order to show that it is capable of being exhibited and performed in actual experience."

Carnegie Steel Company vs. Cambria Iron Company, 185 U. S., 403.

In this case a process was involved which consisted in placing a large receptacle, called a mixer, between the blast furnaces and converters in a steel mill so that if one blast furnace should produce a faulty charge, by the law of averages its deleterious effect would be mixed with and lost in a large number of perfect charges ; so that, for illustration, instead of producing ninety-nine good rails and one bad rail, one hundred rails each ninety-nine per cent. perfect would be produced. Claim 2 involved in the case was as follows :

" 2. In the art of mixing molten metal to secure uniformity of the same in its constituent parts preparatory to further treatment, the process of introducing into a mixing receptacle successive portions of molten metal un-uniform in their nonmetallic constituents (sulphur,

silicon, etc.), removing portions only of the composite molten contents of the receptacle without entirely draining or emptying the same, and successively replenishing the receptacle with fresh ununiform additions, substantially as and for the purposes described."

The Court sustained the patent saying:

> "It should be borne in mind that this process was one not accidentally discovered, but was the result of a long search for the very purpose. The surprise is that the manufacturers of steel, having felt the want for so many years, should never have discovered from the multiplicity of patents and of processes introduced into this suit, and well known to the manufacturers of steel, that it was but a step from what they already knew to that which they had spent years in endeavoring to find out. It only remains now for the wisdom which comes after the fact to teach us that Jones discovered nothing, invented nothing, accomplished nothing."

Claim two of the second Hassam patent clearly comes within the purview of the settled law.

The Third Hassam Patent.

The third Hassam patent No. 861,650, was co-pending in the Patent Office with the second Hassam patent, and its distinguishing feature consists in the way in which the wearing surface layer is applied to unite with the cement grouted foundation. This third Hassam patent, referring to the first patent No. 819,652, states:

> "The principal object of this invention is to provide for improving the surface layer, and the improved surface layer can be used either with those constructions and methods which involve the use of previously coated stone, or with that which is carried out with uncoated stone afterwards grouted" (Page 1, lines 20–25).

The specification then describes the laying of the broken stone foundation and the application of the cement grout thereto in substantially the same way as in the second Hassam patent, so that the voids are all filled with the grout and the air expelled; but with this difference, that the grouting is one which fills the voids and overflows the foundation. In accordance with the first Hassam patent, the cement used in the grouting operation is allowed to stand until perfectly hard before the wearing surface is applied. In accordance with the third Hassam patent, the wearing surface is applied *while the grout is still fluid and before the cement has a chance to set or harden*, so that the wearing surface material is united to the foundation by the cement grout. In this connection the specification of the third Hassam patent says:

> " In order to produce a suitable surface on top of the pavement or other structure which is being made, uncoated fine or pea stones are rolled into the layer *c before the cement has a chance to set or harden.* The top layer *c* however, may be formed of a mixture of sand, cement, and fine pea stones preferably in substantially equal proportions, and a suitable amount of water and applied to the top of the layer of hard rolled stones " (page 1, lines 53-61).

The claims are as follows:

> " 1. An artificial structure comprising a foundation layer of hard rolled stone, having grouting filling the voids therein and a surface layer *comprising a continuation of said grouting* containing fine stones compressed into its surface.
>
> " 2. A road or pavement consisting of a bottom layer of hard rolled uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, and a top layer of smaller uncoated stones *compressed into the surface of said grouting before it sets.*
>
> " 3. A road or pavement consisting of a bottom

layer of stone, a grouting placed upon said stone and filling all the voids therein, and a top layer of smaller uncoated stone *compressed into the surface of said grouting before it sets.*

"4. The method of making a pavement which consists in rolling uncoated stone, placing a thin grouting thereupon, allowing the grouting to run down and fill the voids in the layer of stones, and *compressing fine uncoated stones into said grouting before it sets.*"

In brief, the first Hassam patent covers an improved cement concrete foundation for pavements, upon which any wearing surface can be placed.

The second Hassam patent covers a detail improvement in the process or method of making the foundation of the first patent.

The third Hassam patent covers an improved composite pavement made up of a foundation and wearing surface, the foundation being made by the method and improvement of the first and second patents and a wearing surface, consisting of a continuation of the cement grout which binds the broken-stone foundation together, in which fine uncoated stones are compressed before the same sets.

The first three claims of the third patent cover the complete pavement itself, and the fourth claim covers the method of making the complete pavement.

As stated in the first two patents, the foundation can be used with any form of wearing surface applied thereto.

But in actual practice complainants' great success has been made with the complete Hassam pavement, which embraces the inventions of the three patents. As testified to by Mr. Hassam, 80 to 90 per cent. of the business done by the complainant and its licensees has been with the complete pavement covered by the three patents in suit (x-Q. 78, page 96).

As the defendants in this case have infringed all three of the Hassam patents, and have laid the complete Hassam pave-

ment, it is not necessary to discuss further the distinctions between the three patents.

As shown by the testimony, the Hassam pavement is an unqualified success. Road-building has been a problem which has engaged the attention of the best engineers in various communities for centuries. Road-building to-day is a live question in any community. The price paid for the Hassam pavement has varied from $1.45 to $4.10 per yard, due to various conditions (Hassam, A. 10, page 85). The price paid to these defendants by the City of Portland for Hassam pavement was $1.75 per square yard (page 29). This figure was offered by these defendants without including any royalty.

When Mr. Hassam testified in June, 1912, complainants had worked about five years introducing Hassam pavement, the first patent being dated April 23, 1907. Three million yards had been laid. Taking $2.00 as a fair average price of the pavement, this represents a business of over six million dollars.

Hassam pavement must have successfully fulfilled every requirement, because municipalities throughout the United States would not have invested these millions of dollars in Hassam pavement otherwise. While the Hassam methods may seem simple, and, in the light of to-day's experience, it may be a matter of wonder that the methods were not before devised, yet the fact remains, with the building of pavements a burning question throughout the breadth of this land for many years, that no engineer, no road builder, no concrete contractor, nor any man who had his attention directed to the inefficiency and poor quality of pavement, when it was attempted to use cement concrete prior to Mr. Hassam's inventions, ever saw how to remedy the defects and make successful cement concrete pavement. In the Law of Patents it is the last step, like Mr. Hassam's, which turned failure into success and which brought about great commercial use, which is rewarded by the Patent Law.

Law on Simple Meritorious Inventions.

Barb Wire Patent, 143 U. S., 275–282 :

> " Under such circumstances courts have not been reluctant to sustain a patent to the man who has taken the final step which has turned a failure into a success. In the law of patents it is the last step that wins. It may be strange that, considering the important results obtained by Kelly in his patent, it did not occur to him to substitute a coiled wire in the place of the diamond shape prong, but evidently it did not; and to the man to whom it did ought not to be denied the quality of inventor. There are many instances in the reported decisions of this court where a monopoly has been sustained in favor of the last of a series of inventors, all of whom were groping to attain a certain result, which only the last one of the number seemed able to grasp."

Krementz vs. Cottle, 148 U. S., 556–559 :

> " It is not easy to draw a line that separates the ordinary skill of a mechanic, versed in his art, from the exercise of patentable invention, and the difficulty is specially great in the mechanic arts, where the successive steps in improvements are numerous, and where the changes and modifications are introduced by practical mechanics. In the present instance, however, we find a new and useful article, with obvious advantages over previous structures of the kind. A button formed from a single sheet of metal, free from sutures, of a convenient shape, and uniting strength with lightness, would seem to come fairly within the meaning of the patent laws."

Carnegie Steel Co., Ltd., vs. Cambria Iron Company, 185 U. S., 403.

> " It is true that the Jones patent is a simple one, and in the light of present experience it seems strange

that none of the expert steel makers, who approached so near the consummation of their desires, should have failed to take the final step which was needed to convert their experiments into an assured success. This, however, is but the common history of important inventions, the simplicity of which seems to the ordinary observer to preclude the possibility of their involving an exercise of the inventive faculty.

Diamond Rubber Co. vs. Consolidated Rubber Tire Co. and *Rubber Tire Wheel Co.*, 220 U. S., 428.

"The tire has utility, a utility that has secured an almost universal acceptance and employment of it, as will subsequently appear. It was certainly not an exact repetition of the prior art. It attained an end not attained by anything in the prior art, and has been accepted as the termination of the struggle for a completely successful tire. It possesses such amount of change from the prior art as to have received the approval of the Patent Office, and is entitled to the presumption of invention which attaches to a patent. Its simplicity should not ~~blind~~ blind us as to its character. Many things, and the patent law abounds in illustrations, seem obvious after they have been done, and, 'in the light of the accomplished result,' it is often a matter of wonder how they so long 'eluded the search of the discoverer and set at defiance the speculations of inventive genius' (Pearl v. Ocean Mills *et al.*; 2 Bann & A., 469; Fed. Cas., 10,876). Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by a merely skilful attention. But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not. It regards a change as evidence of novelty, the acceptance and utility of change as a further evidence, even as demonstration. And it recognizes degrees of

change, dividing inventions into primary and secondary, and as they are, one or the other, gives a proportionate dominion to its patent grant. In other words, the invention may be broadly new, subjecting all that comes after it to tribute, (Railway Co. vs. Sayles, C. D., 1879, 349 ; 15 O. G., 243 ; 97 U. S., 554) ; it may be the successor, in a sense, of all that went before, a step only in the march of improvement, and limited, therefore, to its precise form and elements, as the patent in suit is conceded to be. In its narrow and humble form it may not excite our wonder as may the broader or pretentious form, but it has as firm a right to protection. Nor does it detract from its merit that it is the result of experiment, and not the instant and perfect product of inventive power. A patentee may be baldly empirical, seeing nothing beyond his experiments and the result ; yet if he has added a new and valuable article to the world's utilities he is entitled to the rank and protection of an inventor."

George Frost Co. et al. vs. Cohn et al., 119 Fed., 505 (Circuit Court of Appeals for the Second Circuit) :

"That its selection was not an obvious thing is persuasively and cogently shown by the fact that during many years numerous inventors were trying to remedy the defects in the old device, and it did not occur to them how simply and satisfactorily this could be done by making the button of rubber or some other elastic or yielding material."

Regent Mfg. Co. et al. vs. Penn Electrical & Mfg. Co., 121 Fed., 80 (Circuit Court of Appeals for the Seventh Circuit).

"The device seems exceedingly simply. But its very simplicity, in such an old field, should be a warning against a too ready acceptance of the *ex post facto* wisdom of the bystander."

Farmers' Mfg. Co. vs. Spruks Mfg. Co., et. al., 127 Fed., 691 (Circuit Court of Appeals for the Fourth Circuit.)

> " Simple as the device is, others failed to see it, or to estimate its value, or to bring it to the public notice."
> * * * * * * *
> " It was this last step, which has turned previous failures into a success, and we are therefore of opinion that the East patent is valid."

H. J. Heinz Co. vs. Cohn, 207 Fed. Rep., 547–559. (Circuit Court of Appeals, Ninth Circuit.)

> " On the other hand, many instances may be found where very simple concepts have been declared to be the product of inventive genius. Two instances which are fair illustrations are referred to in Potts vs. Creager, *supra*. One was respecting the application to telegraph instruments of a torsional spring such as had been previously used in clocks, doors and other articles of domestic furniture (Western Electric Company v. La Rue, 139 U. S., 601, 11 Sup. Ct., 670, 35 L. Ed., 294), and the other the substitution of the use of anthracite coal for bituminous in smelting iron ore, inasmuch as it produced a better article of iron at less expense (Crane v. Price, Webster's Pat. Cas., 409). Thus it is that simplicity of device is not necessarily the test of lack of invention or patentability. When a thing has succeeded it often seems very plain and simple, and the wonder is that its suggestion had not come earlier; but the fact remains that no one has ever thought of it, whether skilled or not, and yet its utility is at once recognized when brought to public attention. This of itself is evidence of invention. As is said by Mr. Justice Bradley in Loom Co. v. Higgins, 105 U. S., 580, 591 (26 L. Ed., 1177):
>
> > " 'It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result, never attained before, it is evidence of invention.' "

Patents on Pavements Sustained.

There has been considerable litigation in the United States on patents relating to pavements. Some patents have been sustained, and others invalidated, but the Courts have not been reluctant to sustain a patent on pavement, or a process of making same, when the improvement was novel and had gone into commercial use.

City of Elizabeth vs. The American Nicholson Pavement Co., 97 U. S., 126:

> " it is declared that the nature and object of the invention consists in providing a process or mode of constructing wooden block pavements upon a foundation along a street or roadway with facility, cheapness and accuracy, and also in the creation and construction of such a wooden pavement as shall be comparatively permanent and durable, by so uniting and combining all its parts, both superstructure and foundation, as to provide against the slipping of the horses' feet; against noise; against unequal wear; and against rot and consequent sinking away from below."
>
> * * * * * * *
>
> " None of these pavements combine all the elements of Nicholson's, much less a combination of those elements arranged and disposed according to his plan. We think they present no ground for invalidating his patent, and no defense to this suit."

Hurlburt vs. Schillinger, 130 U. S., 456, approving a number of opinions, including Judge SAWYER's opinion in the District of California, 8 Fed. Rep., 821:

> " The invention of Schillinger was a very valuable one. The evidence is that it entirely superseded the prior patent of laying concrete pavements in a continuous, adhering mass."

Warren Bros. Co. vs. City of Owosso, 166 Fed. Rep., 309–313 (Circuit Court of Appeals, Sixth Circuit):

> " The fundamental idea of Warren is not that the ' density ' of his composition gives the stability which he claims, but that the mineral aggregate should of itself resist displacement by traffic. Neither is the utility or intrinsic value of the Warren pavement seriously denied, though its superiority over the sheet asphalt, under ordinary conditions, is by no means conceded. Aside from any sort of concession as to the utility and intrinsic value of the structure of the patent, its durability and practical value in use is established by a great volume of evidence coming from expert engineers acquainted with the pavement problem, as well from others who speak from observation, of the pavement in use in many parts of the country. Its durability under traffic, its cleanliness, its noiselessness, and freedom from undue slipperiness as compared to most other forms of pavement structure may be regarded as well established."

The Schillinger patent involved in the Supreme Court case, 130 U. S., contained claims drawn directly on the pavement itself. The claims involved in the Warren patent in the case decided by the Circuit Court of Appeals for the Sixth Circuit (the opinion being written by Judge LURTON, now Mr. Justice LURTON) were of a similar character, that is, they were drawn directly upon the pavement itself. Claim one of the first Hassam patent and claims one, two and three of the second Hassam patent are of this character.

The patent to Nicholson, involved in the Supreme Court case in 97 U. S., contained two claims. The first was a process claim on the way a pavement was made, and the second was a claim directly upon the pavement itself. The process claim was substantially of the same character as claim one of the first Hassam patent and claim 4 of the third Hassam patent.

Therefore, it is settled law that a claim to a pavement *per se*, and also a claim to a process of making the pavement can form proper subject matter for patent. The claims of the Hassam patent here in suit are therefore not open to criticism as not covering proper subject matter under the law.

Infringement.

The defendants laid their pavement in accordance with the specifications which had been worked up, from time to time by complainants, to practice and embody the inventions of the Hassam patents. The defendants only question their infringement of the second patent. Defendants' argument in this respect is a mere quibble.

Whether the first and third patents are construed broadly or narrowly ; whether the Court regards the same as covering a pioneer invention or only an improvement upon existing pavements and methods of making the same, the defendants have paid the complainants the compliment of piracy in the baldest sense of the term.

Mr. Johnson, the president of the defendant, Consolidated Contract Company, pays an unwitting tribute to the value of Mr. Hassam's pavement foundation made by first crushing the layer of broken stone and then grouting with cement mixture to fill the small voids, in his answer on page 185.

> "Yes, and there is only one way we can cause the voids to be filled up, and *that is by pouring in the thin cement which runs in all these voids, and it certainly fills them all up, and is the only way that could be done satisfactority that I know of now.* We pour that material over the top until it stands on top of the street. If it does not fill as it goes down it fills as it comes up. We put that thin grout on until it stands on top of the finished street."

With relation to the second patent, the particular feature thereof over the first patent, as previously pointed out, consists in the step—"agitating the mass to expel the air and filling the voids between the stone with said grout." This is done, as stated in the patent, by rolling the crushed stone during the grouting process, so that the trapped air will be liberated and the cement grout will flush up to the surface, whereby all the voids or spaces between the stone will be filled with the grout. This step is performed as follows:

> "To properly agitate the grout, I preferably employ a steam roller which may be the same used for compressing the stone" (page 1, lines 48–50).

The defendants' argument of non-infringement of this claim is predicated upon the point that they first crush the uncoated, broken stone with a *ten-ton* roller, and then pass a *five-ton* roller over the crushed stone during the process of grouting with cement to liberate the trapped air.

The specifications under which the defendants work and which are the Hassam specifications, contain the following:

> "The voids in the rock shall then be thoroughly filled with a grout consisting of one part of Portland cement to two parts of sand. This grout shall be sufficiently thin to flow freely, and shall be thoroughly and continuously mixed and poured upon the rock until all the voids are filled and the grout flushes to the surface under the rolling or compression, which shall immediately follow the grouting and shall be continued until no further compacting results." (Page 20).

For what possible purpose do the defendants use this five-ton roller during the cement grouting operation unless it be for the purpose of claim two of the patent? A piece of rock can be broken with a ten-ton hammer, and certainly can be agitated with a five-pound hammer thereafter. Defendants' con-

tention that they do not infringe this claim is completely disposed of by complainants' rebuttal proofs.

(Prof. French, pages 246, 247):

> " x-Q. 12. From your experience, observation and reading upon the subject of concrete, would you say that after a roadbed of broken rock had been rolled with, say a ten-ton roller, until the voids were reduced to a minimum, that after the application of a grout until the same flushed to the surface, that the rolling after that of the mass would be of any benefit?
>
> " A. I should say that it would.
>
> " x-Q. 13. Why?
>
> " A. The rolling of the broken stone with the ten-ton roller consolidates the stone, decreases the voids, and makes difficult the entrance of the grout. Unrolled stone would present freer passages for the grout.
>
> " x-Q. 14. But if the ten-ton roller has so compressed the mass that there can be no further reduction of the voids, what effect upon the rock would the second rolling have?
>
> " A. The second rolling, while it would not further reduce the voids, *does shake or agitate the broken stone sufficiently to be of material aid in the grout entering the voids of the stone.*"

This testimony was brought out on cross-examination by *defendants'* counsel.

Mr. Hassam's testimony, page 248:

> " Q. 2. Assuming that in the method of making the so-called Hassam pavement that a ten-ton roller was used in the initial step of crushing or solidifying the naked, uncoated broken stone, and that thereafter, and after the step of grouting a five-ton roller was rolled over the grouted, crushed broken stone, while the grout was still fluid, what effect would the five-ton roller have?
>
> " A. The five-ton roller would agitate the mass, permeate the grout into the stones and make a solid

monolith. I have noticed that after rolling the dry, crushed stone with an eight-ton roller before the grouting and then using an eight-ton roller after the grouting, that the front roll on the eight-ton roller would agitate the mass to a considerable extent. This front roller of an eight-ton roller has less pressure to the square inch than the rear roller of a five-ton roller. This is due to the fact that in the case of an eight-ton roller and a five-ton roller that three-fifths of the total weight is on the rear roll, and the width of a five-ton roller is 42 inches, an eight-ton roller is 53 inches wide. Therefore, with an eight-ton roller, the compression of the front roll is 136 lbs. to the sq. inch, and with a five-ton roller the compression is 157 lbs. to the sq. inch with its rear roll. It has been my experience after a great deal of study and practical experience that a Hassam pavement of dry stone, after being grouted, agitates very easily, even with heavy tampers, after it had been rolled."

From all viewpoints, defendants have infringed the three Hassam patents in suit. They themselves have contributed nothing to improve pavement building, but are merely leeches on the industry.

Defendants' Infringement—An Argument in Favor of the Validity of Patents.

The Courts have often held where a defendant, with all the processes of the prior art open to him, deliberately pirates and infringes a patent regularly granted, and attempts to justify such piracy by an attack on the validity of the patent, that such conduct in itself constitutes a strong argument toward the validity and meritoriousness of the patent.

A. R. Milner Seating Co. vs. Yesbera, 133 Fed., 916-919 (Circuit Court of Appeals, Sixth Circuit) :

> "The proof also shows that the Milner counter seat has met with considerable public favor, and, what

> is persuasive evidence of its advantages over those of the constructions the defendant advances as anticipations, the latter appropriates Milner's production as the foundation of his own business, and has therewith been very successful (Lehnbeuter v. Holthaus, 105 U. S., 94, 96, 26 L. Ed., 939; Gandy v. Belting Co., 143 U. S., 587, 595, 12 Sup. Ct., 598, 36 L. Ed., 272; Lamb Knit Goods Co. v. Lamb Glove & Mitten Co., 120 Fed., 267, 56 C. C. A., 547)."

Draper Co. vs. American Loom Co., 161 Fed., 728–730 (Circuit Court of Appeals, First Circuit):

> "Moreover, in the case at bar, we have not only the persistency of the respondent corporation in availing itself of the complainant's improvement, but also a mass of alleged anticipatory patents introduced by it, both of which indicate the desirability of something better than the prior art. On the whole, while the invention is a narrow one, and in the absence of the circumstances to which we have referred, might lack patentability, we are compelled to give the complainant the benefit which the issuing of its patent implies."
>
> *Heinz Co. vs. Cohn*, 207 Fed. Rep., 560, C. C. A., 9th Circuit; quoted *ante*, page 39 of this brief.

The Defenses.

Coming now to consider the prior art, upon which the defendants ask the Court to strike down and confiscate the meritorious patents here in controversy, it is hardly necessary to say that the defendants have the burden of proof upon them. In every art can be found prior patents which represent failures, and prior publications which contain general descriptions, the wording of which a defendant can twist to suit the purpose of such defense.

A patent is a substantial right and the foundation to destroy it must be in its way no less substantial. A prior patent or

publication in order to form an anticipation must contain a full and clear disclosure, which will enable the exact invention of the patent in suit to be practiced without using the patent in suit as a necessary side light.

The evidence of the defendants may be divided into—

1. Prior patents;

2. Prior publications;

3. Parol testimony concerning certain alleged prior uses; and

4. McClintock's abandoned experiment.

They will be considered in this order.

The Prior Patents.

1. The prior patents are four in number.

The processes and pavements described in these four prior patents are carefully considered by complainants' expert, Arthur S. Browne, pages 220–226 of the record. Mr. Browne's discussion of these patents is so eminently fair that on cross-examination he was not asked any question concerning the subject matter.

The only patent which seems worth considering in connection with Mr. Hassam's invention is the patent to Murphy, No. 238,706, which appears on pages 330, 331 of the record. In this patent a three-part pavement is formed having a broken stone and iron slag grout foundation B, a layer C of slag and lime thereon, stone blocks A placed on the layer C, and an intersticial filling of grout between the stone blocks A. The pavement is clearly defined in the claim which is as follows:

> "The improved pavement, formed of the broken stone and grout foundation B, the layer C, of slag and lime, the stone blocks A, and the intersticial filling of grout, all as shown and described."

It was claimed that the foundation in this three-part pavement has some analogy to the cement concrete foundation of the first Hassam patent in suit. This patent certainly has no relevancy or bearing upon the complete Hassam pavement.

The foundation for the Murphy pavement is made as follows : The road bed is first prepared, then

> " Upon such bed I spread a layer of broken stone or slag B, to the depth of about six (6) inches, *which is grouted and then rolled* with a heavy roller, to form a firm and solid foundation " (Lines 26–30).
>
> * * * * * *
>
> " The grout I employ is made of the following ingredients in or about the proportions stated : Lime, ground or slaked (blue lias preferred), twenty per centum ; sand, clean and pure, thirty per centum ; iron slag or furnace cinders, twenty-five per centum ; Portland cement, ten per centum ; silica, or oxide of iron, ten per centum ; cast-iron filings, sulphur, etc., five per centum " (Lines 56–64).

While this patent does show the desirability of using grouted concrete as a foundation for a pavement, the steps and the grout suggested are utterly impracticable to make a stable concrete. After the broken stone or slag is laid, it *is first grouted* with a peculiar grout specified. There is no rolling or compressing of the uncoated stone before the grouting. One of the essential steps of the process of the first Hassam patent is the rolling or compressing the stone in an *uncoated or naked* condition *before* grouting. Mr. Hassam says in his first patent :

> " Broken stone or gravel is then spread to a proper depth and rolled with a steam-roller or compressed by any suitable means until the voids between the stone are small and the surface even. *It will be noted that as there is no coating of cement, bituminous, or other mate-*

rial on the pieces of stone they can be compressed very close together and solid, and the voids left between them will be extremely small. *When the stone* or gravel *has been compressed* to the desired closeness and firmness, *it is grouted* with a mixture of cement, sand, and water" (page 1, lines 61–73).

The claim of the first Hassam patent calls for " a bottom layer of *hard rolled uncoated stone*."

In other words, the steps proposed by Murphy are just opposite to Hassam. Hassam rolls his foundation of uncoated stone so that the voids are reduced to a minimum before the cement grout is applied, thus getting as much stone as is possible into the structure and economizing in grout ; whereas, Murphy proposes to apply grout to the foundation before rolling takes place.

The testimony shows that it is impossible to carry out the practice described in the patent to Murphy ; that is, of laying the stone, grouting it, and then rolling it. In the old method of making a concrete foundation of first coating the broken stone with cement and then laying it on the road, a roller was never employed and never could be employed owing to the slippery, unstable condition of the mass (See Prof. French's A. x-Q. 15, page 247). The same would be true of Murphy's purposed method of rolling uncrushed, grouted stone.

Mr. Hassam's process of rolling and compressing the stone in a naked or uncoated condition and then grouting it with cement, sand and water provides a stable mass over which a steam roller can be easily pressed to agitate the mass to allow a thorough grouting, as covered by the second Hassam patent.

The proposed Murphy process of grouting the stone as the first step after it is laid and before it is rolled is an utterly impractical and inoperative idea.

Moreover, the grout proposed by Murphy, containing

twenty-five per centum of iron slag or furnace cinders is not a grout which could be worked into crushed broken stone. The grout would not "fill all the voids therein," as specified in claim one of the Hassam patent.

At any rate, the pavement foundation of this Murphy patent is not the Hassam pavement foundation and is not the pavement foundation laid by the defendants in constructing Hassam pavement.

Mr. Browne's summary concerning this prior patent cannot be traversed.

> "Obviously, this Murphy pavement and the method of making it bear no resemblance to the Hassam pavement and method.
>
> "In Murphy, there is no preliminary hard rolling of the stone foundation before the grouting is applied; there is no grouting whose ingredients are simply cement and sand; there is no agitation or disturbance of the previously hard-rolled stone foundation to insure the grouting flowing into all of the voids and expelling the air; and there is no continuous grouting occupying the voids between the foundation stones and serving to bind the surface layer of small stones to the foundation" (Record, page 222).

The defendants have not attempted to show that a single yard of pavement ever was laid under this patent to Murphy. Complainants made a careful investigation but could find no trace of Murphy, nor any trace of anything done by him. The patent to Murphy is a mere prior paper patent representing an impracticable idea.

While, of course, a patent granted prior to the patent in suit is part of the prior art, and the patent in suit must distinguish therefrom to be valid, the Courts have often said where the prior patent covers an impractical structure which never went into use, and where the patent in suit has proved to be of great utility and has gone into extensive use, that

the prior unsuccessful patent is not to be enlarged or built upon, or ambiguous language therein contained revamped to destroy the patent which has advanced the art.

Robins Conveying Belt Co. vs. American Road Mach. Co., 145 Fed., 923, 924 (Circuit Court of Appeals, Third Circuit).

> " The Healey device was to some extent a paper patent, since it never came into general or extensive use. It had obvious disadvantages.
>
> * * * * * * *
>
> " The Healey patent, although issued about 18 years prior to the patent in suit, never seems to have suggested to any one a construction like that of the Robins patent, which was designed to, and does substantially, obviate all of the disadvantages just adverted to in the use of the Healey patent."
>
> * * * * * * *
>
> " The device in suit was a success from its inception, it came at once into general use, and we are satisfied is of manifest novelty and great utility. The testimony shows that it practically doubles the life of the belt, because of the reduced friction and the regular and constant support which it receives. This consideration, coupled with its undoubted commercial success from the outset, would be entitled to turn the scales in favor of the validity of the patent, if it were otherwise in doubt."

Hall Signal Co. et al. vs. General Ry. Signal Co., 169 Fed., 290–294 (Circuit Court of Appeals, Second Circuit) :

> Success cannot be anticipated by failure.
>
> * * * * * * *
>
> " If we may judge the prior systems from the fact that none of them, except in one or two tentative instances, went into actual use, the inference is plain that railroad men were unwilling to take the risk of installing them. When Wilson took up the work it had virtually been abandoned by the others, they had tried and failed and there was no reliable normal danger

plan then in existence. That Wilson solved the problem we have no doubt, the systems installed under his patent are successful and are rapidly growing in popularity. We do not consider him a pioneer in the sense that he discovered a new art. The idea of a normal danger system was old but he was the first to harness it and set it to work. So much he has contributed and to this extent he is entitled to protection."

American Graphophone Co. vs. Leeds & Catlin Co. et al., 170 Fed., 327-330 (Circuit Court of Appeals, Second Circuit):

"A valid patent should not be destroyed by a vague, confused, indeterminate document.

"If to-day a skilled artisan, who had never heard of the Jones or Adams-Randall patents, were given a Jones disk and the Adams-Randall patents and directed after reading the patent, to construct similar disks, we doubt whether, even with such information, he would be able to do so. It must be remembered that the English patent was granted in 1888, nine years before the Jones application, and in the interval, Bell, Tainter, Berliner, Edison and many other accomplished inventors were striving to produce commercial record-disks, but it never occurred to any of them, not even to Adams-Randall himself, to follow what is now said to be the obvious direction of the Adams-Randall patent.

"Is not the fact that the patent was never heard of until it was resurrected for the purpose of this litigation, persuasive evidence that it contained nothing of value to the art?"

* * * * * * *

"In short, we are unable to see that Adam's-Randall's contribution to the art advanced it a single step. His patents abound in tentative, indeterminate, and infeasible suggestions too nebulous to anticipate a patent which has actually shown the art how to make the thing needed. In contemplation of the law an invention does not exist until the inventor's ideas have been reduced to practical form. As was said in Stand-

ard Cartridge Co. v. Peters Co., 77 Fed., 630, 645, 23 C. C. A., 367, 381:

> " 'The mere existence of an intellectual notion that a certain thing could be done, and, if done, might be a practical utility, does not furnish a basis for a patent, or estop others from developing practically the same idea.'
>
> " The burden of proving anticipation by clear and convincing evidence rests heavily upon the defendants. We cannot avoid the conclusion that the sanguine and optimistic view taken by the defendants of the Adams-Randall patents is not justified by anything found in the patents themselves. The patent upon which the chief reliance is placed fails to give a clear statement of the method of producing the Jones disk. The naked assertion that a certain result has been accomplished without stating how, without describing the means which produce the result is insufficient as an anticipation (Hanifen v. Godshalk Co. 84 Fed., 649, 28 C. C. A., 507).
>
> " The most favorable view for the defendants is that the question of anticipation by the Adams-Randall patents is involved in doubt, and this is fatal to their contention. 'If the process pursued for its development failed to reach the point of consummation, it cannot avail to defeat a patent founded upon a discovery or invention which was completed. * * * The law requires not conjecture but certainty.' Coffin v. Ogden, 18 Wall., 120–124, 21 L. Ed., 821; Badische v. Kalle, 104 Fed., 802, 44 C. C. A., 201."

Judge Bean's reasons for refusing to stretch this patent to anticipate the Hassam patents in suit are absolutely conclusive.

> " In the Murphy patent there is no provision for rolling the stone foundation before the grouting is applied, no grouting consisting simply of cement, sand, and water, no agitation or disturbance of a previously rolled stone foundation to cause the grouting to fill out the voids and expel the air, and no continuous grouting occupying the voids between the foundation stone and

> serving to bind the surface layer of small stones to the foundation. Moreover, although the Murphy patent was issued in 1881, there is no evidence that any pavement was ever laid under it. It never came into general or extensive use. It is a mere paper patent and should not be held to invalidate the complainants' patent, which the evidence shows to be in common and extensive use."

The other three prior patents need not be considered specifically in this brief. They are fully discussed by Mr. Browne (Pages 222-226).

The patent to Bayard, No. 381,667, and the patent to Hagerty, No. 413,278, are paper patents. The patent to Warren, No. 675,430 is one of the patents taken out on the so-called bitulithic pavement.

All of these three prior patents relate to roads or pavements made out of bituminous compounds, such as asphalt and tar. The roads or pavements made by the process disclosed in these patents have to be laid hot. There is nothing relating to concrete roads having *a grouting of cement*, as specified in claim one of the first Hassam patent; *grouting with a mixture of cement, sand and water*, as specified in the claim in suit of the second Hassam patent; or *the grouting of cement* or *cement grouting*, as specified in the third patent.

These three prior patents under discussion properly come under the head of bituminous pavements, which will be considered at a later point in this brief. A bituminous or asphalt pavement has no bearing upon the patents in suit. The prior art as represented by these four prior patents does not negative the validity of any one of the claims of the Hassam patents.

The Prior Publications.

The prior publications are treated by Complainants' expert, Mr. Browne, pages 229–235 of the record. The only statement in the publications which seems at all material, or which has any bearing upon a concrete foundation made of crushed broken stone and a cement grouting, is found in the Encyclopedia Britannica and is contained in the first paragraph printed on page 161 of the record, and is as follows:

> "Concrete macadam, formed by grouting with lime or cement mortar a coat of broken stone laid over a bed of stone previously well rolled, has been tried as an improvement on an ordinary macadamized surface, but not hitherto with much success."

So far as can be gathered, this unsuccessful idea relates entirely to the making of *the surface* of the pavement. In short, this idea comprises, in the first place, a foundation bed of stone well rolled. Whether the stone is to be large or small, coated or uncoated, is guess-work. Then a coat of broken stone is laid on said foundation bed *without rolling.* Then this unrolled layer of broken stone is grouted with lime or cement mortar. It is apparent that the grouting is not applied or intended to be applied to the foundation. The grouting is simply used with the superimposed top coat of unrolled broken stone. There is no description of how the grouting and broken stone are incorporated together. There is no suggestion in this paragraph that the foundation is to be made into a solid structure.

So far as can be gathered from the general statements in this paragraph, there is nothing at all suggested which has any bearing upon the Hassam processes and the Hassam pavement. The statement simply shows how, previously to Has-

sam, the use of cement concrete in any way in pavements *had been unsuccessful.*

It is not necessary to detail all the publications at length. This has been fully done by Mr. Browne in his testimony. No one of the publications measures up to the requirements of law to form an anticipation. The law is well established with regard to the character of a publication necessary to constitute an anticipation.

Seymour vs. Osborne, 11 Wall., 555.

> " Patented inventions cannot be superseded by the mere introduction of a foreign publication of the kind, though of prior date, unless the description and drawings contain and exhibit a substantial representation of the patented improvement, in such full, clear and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct and practice the invention to the same practical extent as they would be enabled to do if the information was derived from a prior patent. Mere vague and general representations will not support such defense, as the knowledge supposed to be derived from the publication must be sufficient to enable those skilled in the art or science to understand the nature and operation of the invention, and to carry it into practical use. Whatever may be the particular circumstances under which the publication takes place, the account published, to be of any effect to support such a defense, must be an account of a complete and operative invention capable of being put into practical operation (Web. Patent Case, 719; Curt. Pat. (3d ed.), sec. 278*a*; Hill v. Evans, 6 Law T., N. S., 90; Betts v. Menzies, 4 Best & S., Q. B., 999)."

Cohn vs. U. S. Corset Co., 93 U. S., 366–370:

> " It must be admitted that, unless the earlier printed and published description itself exhibits the later patented invention in such a full and intelligible manner as to enable persons skilled in the art to which the inven-

tion is related to comprehend it without assistance from the patent, or to make it, or repeat the process explained, it is insufficient to invalidate the patent."

Carnegie Steel Co. vs. Cambria Iron Co., 185 U. S., 403:

> " Certain discussions, reported in the Journal of the British Iron and Steel Institute, are relied upon as embodying a description of the Jones process. Running through all these discussions there is the same idea of the difficulties experienced in the practical carrying out of the direct process by reason of the want of uniformity in the different products of the blast furnaces, and the possibility of remedying this and thereby doing away with the expense of remelting the pig iron in cupolas by a mixture of such products in a reservoir intermediate the furnaces and the converters; but the dominant idea of the Jones patent, of maintaining a permanent and large quantity of molten metal in the mixer for that purpose, does not seem to have occurred to any of the writers upon the subject. Through all these papers there is an admission of practical failure in the efforts theretofore made to obviate the difficulty, and a half-expressed hope that American ingenuity might ultimately solve the problem. Some of the expressions, taken by themselves, seem to foreshadow the Jones idea; but there was nothing in any of these discussions that filled the requirement of the law (Rev. Stat., § 4886) of a description in a publication sufficient to anticipate the patent."

The Alleged Prior Uses.

The only definite testimony directed to the prior use or construction of a cement concrete pavement foundation is found in the deposition of George W. Gordon (pp. 139–143 and 199–205) and in the stipulated deposition of A. C. Gilman (pp. 350–365).

The witness Gordon is a carpenter, sixty-three years of age Mr. Gordon was born in Liverpool, England,

and left there when he was twenty-four or twenty-five years of age, thirty-eight or thirty-nine years before he testified. This witness is opposed to Hassam pavement and his bias and interest are apparent. His testimony is directed to a description of the way he thought some pavement was laid in the streets of Liverpool before he left, and also has reference to some concrete pavement about the docks in Liverpool which was laid before he appeared on the scene, and concerning which he testifies how he was told it was made. So far as can be gathered from the statements of this witness, the cement concrete laid in these places was laid by the old process, that is, by first coating the stone with cement at the side of the road and then laying the coated stone on the road. It is hardly believed that this testimony will be seriously urged.

Under the Statutes, prior use of an invention in a *foreign* country does not affect or have any bearing on the validity of a United States letters patent.

> *Section 4923.*
>
> " Whenever it appears that a patentee, at the time of making his application for the patent, believed himself to be the original and first inventor or discoverer of the thing patented, the same shall not be held to be void on account of the invention or discovery, or any part thereof, having been known or used in a foreign country, before his invention or discovery thereof, if it had not been patented or described in a printed publication."

Neither does knowledge by a man residing in this country, of a prior use of an invention in a foreign country, have any bearing on the validity of a United States letters-patent.

Westinghouse Machine Co. vs. General Electric Co., 207 Fed., 78 (Circuit Court of Appeals, Second Circuit).

> " Section 4923 deals specifically with the effect of knowledge and use in a foreign country, and it makes

> no distinction whether such use is made or such knowledge is acquired by persons who, after using the thing or acquiring the knowledge, remain abroad or come here. This section (4923) provides that the patent taken out by an applicant for the same thing here shall not be void on account of such knowledge or use unless the invention had been patented or described in a printed publication. As we construe this section, reduction to practice in a foreign country can never operate to destroy a patent applied for here, however widely known such reduction practice may be, either among foreigners or among persons living here, unless the invention be patented or described in a printed publication. To that extent section 4923 qualifies the language of section 4886, which without such qualification might well lead to a different result."

Mr. Gordon was recalled to the stand and testified that about thirty-two years ago he laid a basement floor in Detroit, Michigan, by spreading broken stone and brick on the basement floor and pouring a cement grout thereon to make up a concrete (page 199). This evidence is just as incompetent, as it merely is the unsupported oral testimony of one witness, and what if Mr. Gordon did make a floor in this manner, what has that got to do with a pavement? What has it got to do with Mr. Hassam's broad idea of laying uncoated, broken stone on a roadbed, crushing it with a roller to reduce voids, and then grouting with a cement grout?

Complainants brought another suit in Portland, Oregon for infringement of the Hassam patents, against the Reliance Construction Company, and it was stipulated that whatever decree was entered in the case at bar, should also be entered in this last case. The same counsel appear in both cases.

After the proofs in the case at bar were long closed, defendants' counsel brought forward a witness, A. C. Gilman and took his deposition in the case against the Reliance Construction Company.

By stipulation of the parties,this deposition has been printed

in this case, pages 350-365, so that all testimony concerning the attack on the validity of the Hassam patents in suit can be before this Court.

This witness is what is known as a " floater," that is he states, " at present I am unoccupied." When he testified he was staying at the Chesterbury Hotel, Portland. He has been engaged in lumbering, mining, farming and railroad work. So far as the material part of his testimony is concerned, it sums up about as follows :

When he was fourteen years old, that is in 1874, thirty-nine years before he testified, he says he saw a Russian named Waryzenak, lay an approach to a blacksmith shop twenty feet wide, probably about twenty feet square. He described the method of making this approach as follows (pages 352, 353) :

> " A. They excavated about eight inches deep to receive the pavement, then pounded up native stone there into suitable sizes and filled the excavation with loose rock, and then tamped it with a tamp bar or a block of wood, and then made the mixture of cement and sand and poured it over this stone and then swept it in and mixed it in a liquid form ; that is quite a thin solution."

This witness testifies that he has had no experience himself in the paving business.

This witness says he saw this approach ten years afterward, but that the building has since burned down and another building has been erected on the ground, so that the approach is no longer in existence. It is, therefore, impossible to verify or disprove what this witness says he saw.

But attempting an analysis of this witness' testimony, tamping stone with a " tamp bar or block of wood " would not compress or crush the stone together to any appreciable degree to reduce the voids. Tamping a layer of stone with a wooden block would not crush the broken stone so that the voids therein would be reduced to any appreciable degree, or

so that there would be produced what Mr. Hassam calls a bottom layer of *hard rolled*, uncoated stone. Further, there is nothing found in this witness' testimony to show that the structure described was used or constructed as a foundation to receive a suitable wearing surface to make up a pavement.

This witness further testifies that he has employed, himself, a process similar to the process employed by Mr. Hassam for making his pavement foundation, in making the floor for an engine house and for starting footings for foundation walls. The impossibility of hard-rolling an engine floor or the foundation footing of a building to get a layer of hard-rolled crushed stone, is apparent, and what have floors and foundation footings to do with pavement construction anyway?

The testimony of this witness is too conjectural to be of any value.

Moreover, the testimony on this prior use defense is entirely oral; it rests on the recollection of one man testifying to something he thought he saw thirty-nine years ago and no other witness or corroboration is brought forward.

The Courts have always refused to sustain a defense of prior use on testimony of this nature.

Washburn & Moen Mfg. Co. vs. Beat 'Em All Barbed Wire Co., 143 U. S., 275.

> " We have now to deal with certain unpatented devices, claimed to be complete anticipations of this patent, the existence and use of which are proven only by oral testimony. In view of the unsatisfactory character of such testimony, arising from the forgetfulness of witnesses, their liability to mistakes, their proneness to recollect things as the party calling them would have them recollect them, aside from the temptation to actual perjury, courts have not only imposed upon defendants the burden of proving such devices, but have required that the proof shall be clear, satisfactory, and *beyond a reasonable doubt.* Witnesses whose memories are prodded by the eagerness of interested parties

to elicit testimony favorable to themselves are not usually to be depended upon for accurate information. The very fact, which courts as well as the public have not failed to recognize, that almost every important patent, from the cotton gin of Whitney to the one under consideration, has been attacked by the testimony of witnesses who imagined they had made similar discoveries long before the patentee had claimed to have invented his device, has tended to throw a certain amount of discredit upon all that class of evidence, and to demand that it be subjected to the closest scrutiny. Indeed, the frequency with which testimony is tortured or fabricated outright, to build up the defense of a prior use of the thing patented, goes far to justify the popular impression that the inventor may be treated as the lawful prey of the infringer. The doctrine was laid down by this court in Coffin v. Ogden, 85 U. S., 18 Wall., 120, 124 (21, 821, 823), that 'the burden of proof rests upon him,' the defendant, 'and every reasonable doubt should be resolved against him.' "

National Hollow Brake-Beam Co. et al. vs. Interchangeable Brake-Beam Co. (106 Fed., 693–703). (Circuit Court of Appeals, Eighth Circuit.)

> " The solemn grants of great franchises cannot be stricken down by testimony so flimsy and unsatisfactory. The memory of men is too brief and fleeting, too easily swayed by chance and by interest, to permit the recollection of one or two witnesses, prompted by presently prepared pictures of the proof desired, to condition the validity of valuable patents that have stood unchallenged for years. Unsupported oral testimony of a prior use is always open to suspicion, and it cannot prevail over the legal presumption of validity which accompanies the patent, unless it is sufficient to establish such a use beyond a reasonable doubt. The testimony relative to the use of this Wabash beam is not of that character, and it will not be further considered."

It has not been shown in this case that a single piece of Hassam pavement was ever constructed before Mr. Hassam's

invention. If Mr. Hassam's invention had been merely the application of any of the ordinary or well understood methods of making concrete floors, or building foundations to the construction of a pavement, it is incomprehensible that the art of making concrete pavements should have remained a failure for so many years, with skilled engineers all over the country giving their attention to the problem of making the best pavements possible.

On this point the argument is exactly parallel with the reason Judge LURTON gave for rejecting a piece of sidewalk and masonry constructions as anticipations of the Warren patent on bitulithic pavement.

Warren Bros. Co. vs. City of Owosso, 166 Fed. Rep., 309–318.

> " We are the more indisposed to treat this piece of experimental sidewalk as an anticipation because, in the wide range which has been covered by the evidence in this case, it has not been shown that anywhere had there been constructed a *single rod of street pavement* according to his plan prior to his invention. Under such circumstances, we cannot think the proof of anticipation strong enough to deprive him of his invention."

Diamond Patent Co. vs. S. E. Carr Co., C. C. A. Ninth Circuit, October 13, 1914, 217 Fed. Rep., 400-402.

> " In Gaylor v. Wilder, 10 How. 477, 13 L. Ed. 504, it was held that the prior use must be so far understood and practiced or persisted in as to become an established fact, accessible to the public and contributing definitely to the sum of knowledge. Cases applying these rules are Acme Flexible Clasp Co. v. Cary Mfg. Co. (C. C.), 96 Fed., 344, Anthracite Separator Co. v. Pollock (C. C.), 175 Fed., 108, Ramsay v. Lynn (C. C.), 187 Fed., 218, and Ajax Metal Co. v. Brady Brass Co. (C. C.), 155 Fed., 409."

The testimony on this branch of the case merely shows the extremes to which the defendants are driven to find some excuse for the piracy of the patents in suit.

McClintock's Abandoned Experiment.

Mr. McClintock's experiment and its abandonment is clearly proven by the printed report read in evidence, page 198, and Mr. McClintock's deposition taken under commission, pages 207–214.

In 1893, Mr. McClintock was City Surveyor of Rochester, New York, and was familiar with the construction of pavements around stations and station yards. Owing to the unsatisfactory condition of the surface of the macadam roads in that vicinity, Mr. McClintock asked permission of the Board of Aldermen to try an experiment on South Fitzhugh Street. He was allowed to try this experiment and what he did is described in his printed publication. The same is also referred to in Table No. 5, showing miscellaneous improvements made during the Year 1893. This refers to the experiment as "*Resurfacing* with Macadam of trap rock and Portland cement grout," a little piece of road thirty-six feet wide and three hundred and twenty-five feet long between Main Street and the foot of approach to the Erie Canal bridge.

McClintock admits what he did "was in the nature of an experiment" and "had reference to the resurfacing of a small section of a street and not to the preparation of a foundation" and "the original foundation was left in the street." This foundation was "local stone laid in the form known as 'telford,' that is, it was flat stones set on edge and wedged together, as distinguished from macadam where the stones are broken into small fragments." This original foundation was "from one to two feet thick" and was not removed in applying the experimental surface. The experimental layer of trap rock was six inches thick in the middle of the street and two inches thick at the edges of the street. While this did produce a new top surface on the existing telford foundation, it was not a suitable top surface. It did not occur to Mr. McClintock or anyone else that a

beautiful foundation for a pavement could be produced by this process. The Hassam foundation is not adapted for the top surface or the wearing surface of a pavement and no claim has been made that it is.

The history of Mr. McClintock's experiment shows how near a man can come to making an invention and stumble over it and not bring it to the light of day.

Mr. McClintock says in his report (page 198) :

> " This has been down eight months and already shows that the size of stone used was too small ; it would all pass through a one and one-half inch ring. The stones are so small that the calk of a horseshoe throws out bodily a stone sometimes. I believe it will be well to try this again with stones which will pass a three-inch ring and will not pass a two-inch ring. The cost of this pavement was one dollar per square yard."

The experiment was never tried again, and the future history of this experiment puts it clearly into the category of an *abandoned* experiment, which is not sufficient in law to anticipate a successful patent.

Mr. McClintock's testimony on abandonment is as follows (Page 213) :

> " Cross-interrogatory seven : In this report, this statement is made, ' This has been down eight months and already shows that the size of the stone used was too small.' Please explain this more fully.
>
> " Answer : After eight months' use the horses' calks were picking out some of the individual stones and I became doubtful as to the advisability of going further with it until further experimenting or experience with it. Later temperature cracks developed.
>
> " Cross-interrogatory eight : What did the laying of the pavement referred to on page five of said report demonstrate to you ?
>
> " Answer : It demonstrated that I might have something of practical value, but that I had not carried it

far enough or experimented enough at length to demonstrate its practical value.

"Cross-interrogatory nine: Did you ever make any effort to introduce or try this pavement anywhere else except in 1893 on Fitzhugh Street in Rochester, New York?

"Answer: No."

This piece of surface was pulled up after it had been down four or five years (Page 211):

> "The piece of pavement laid, developed irregular temperature cracks and on one portion of it where the hacks stood in the shade of the court house, the horses would drill holes with their feet in kicking off flies, etc., so that it soon became a question of how the pavement could be maintained. It was some two and a half years after the pavement was laid, when I left the office of the City Engineer, as it had then become, and as I understand it, some two years after that, when an overhead bridge crossing the canal in the vicinity of such pavement was replaced by a lift bridge and the approaching grades were reduced, it was deemed wise by the city authorities then to cover the new portion of roadway with asphalt, and at that time *they also pulled out this short section of cement and substituted therefor asphalt.*"

Mr. McClintock never knew of any other pavement where such a cement concrete surface was tried (Page 210, A. 10 and 11).

This abandoned experiment clearly shows the difficulties experienced engineers encountered in trying to introduce cement concrete into the pavement construction, and clearly shows the obstacles Mr. Hassam had to overcome before he could reach success.

The McClintock experiment in itself has no bearing on Mr. Hassam's inventions. It did not relate to the preparation of a foundation for a pavement, as specified in the first Hassam

patent. The experiment has no bearing at all on the Hassam second and third patents.

Moreover, under the law of abandoned experiment Mr. McClintock's efforts are of no probative force to assist the defendants in their efforts to invalidate the Hassam patents in suit.

In *Tie Corn Planter Patent,* 23 Wallace, 181, 211, an alleged anticipatory machine was used for planting five acres of corn, "but the machine was never used again, and was afterwards broken up and no other was ever made." The Supreme Court held that there was no anticipation on the ground that the alleged prior invention was a mere abandoned experiment.

Smith vs. Goodyear Dental Vulcanite Co., 93 U. S., 486, 498.

> "The experiments resulted in nothing practical. * * * In consequence of these and other objections the manufacture was soon abandoned, and it may properly be considered an abandoned experiment."

Washburn & Moen Mfg. Co. vs. Beat 'Em All Barbed Wire Co., 143 U. S., 158–161.

> "It is possible that we are mistaken in this; that some one of these experimenters may have, in a crude way, hit upon the exact device patented by Glidden, although we are not satisfied from this testimony whether or by who it was done. It is quite evident, too, *that all or nearly all these experiments were subsequently abandoned.*"

Deering vs. Winona Harvest Works, 155 U. S., 286, 301.

> "if he ever used a pivoted device at all—of which we have considerable doubt—his efforts in that direction must be relegated to the class of *unsuccessful and abandoned experiments*, which, as we have repeatedly held, do not affect the validity of a subsequent patent."

Potts vs. Creager, 155 U. S., 597.

> "This device was constructed in 1874, was used for only half an hour when by an accident several of the scrapers or polishers were broken, and before others could be moulded the building took fire and burned down. That it was not considered a success is evident from the fact that the machine was never reconstructed, but in 1878 Creager took out a patent for a similar machine, in which a smooth or corrugated roller of wood, glass, bone, ivory, or metal was the distinctive feature. In short, the machine of 1874 appears to have been merely an abandoned experiment."

Gamewell Fire-Alarm Telegraph Co. vs. Municipal Signal Co., 61 Fed., 948, 952 (Circuit Court of Appeals, First Circuit).

> " The only use ever made of it by Wood was *merely experimental. It was never used for any practical purpose.* There is no pretence that Noyes ever knew of its existence."

Warren Bros. Co. vs. City of Owosso, 166 Fed. 309, 317 (Circuit Court of Appeals, Sixth Circuit).

> " The results from the experiment were not deemed important enough to induce the construction of other side-walks nor the material tried for street pavement purposes, for it should not be altogether ignored that, though the analogy between street pavement and side-walk pavement is close, there are material differences between the two problems. In one, the wear and strain to which it is subjected is that of the passage of pedestrians. In the other, the influences which tend to disintegration are those resulting from the steel-shod feet of horses and the grinding pressure of vehicular traffic. The failure in any way to prosecute the experiment under the circumstances is conduct from which abandonment may be imputed."
>
> "In Potts v. Creager, 155 U. S., 597, 604, 15 Sup. Ct., 194; 39 L. Ed., 275, an alleged prior use was not

considered a success, ' from the fact that the machine was never reconstructed.' The effect of conduct as evidence of abandonment is also referred to in Gayler v. Wilder, and other cases cited heretofore, as well as in the case of the Corn Planter Patent, 23 Wall., 181; 23 L. Ed., 161; and in Deering v. Winona Harvester Works, 155 U. S., 286, 301; 15 Sup. Ct., 118; 39 L. Ed., 153."

Kings County Raisin & Fruit Co. vs. U. S. Consol. Seeded Raisin Co., 182 Fed., 59-63 (Circuit Court of Appeals, Ninth Circuit).

"It is probably unnecessary, on this appeal, to determine just what effect should be given to the Crosby patent as limiting the scope of the Pettit invention. It would seem that it was one of those unsuccessful and abandoned inventions which are held to have no place in the art to which they relate. In an analogous case, Mr. Justice BROWN said:

"' His efforts in that direction must be relegated to the class of unsuccessful and abandoned experiments, which, as we have repeatedly held, do not affect the validity of a subsequent patent' Deering v. Winona Harvester Works, 155 U. S., 286, 302; 15 Sup. Ct., 118, 124; 39 L. Ed., 153."

Bituminous Pavements.

In the record there are many references to bituminous, asphalt and tar pavements. These have no bearing upon the cement concrete pavements involved in this suit, in which the solidification is obtained by the chemical setting, or hydration of cement. As previously pointed out, a bituminous pavement, generically speaking, is characterized by having bituminous, asphalt or tar compound embodied therein. These compounds have to be melted and worked hot to be embodied into the pavement. The making of a bitumiuous pavement by

melting such compounds and working them into pavements while hot is altogether a different process from Mr. Hassam's grouting simply with sand, cement and water. The Hassam method requires no special apparatus, the grouting being accomplished simply by pouring the creamy cement grout upon the layer of crushed, broken stone, and the result obtained is practically a monolith or a solid piece of stone, as distinguished from a bituminous pavement in which the materials are practically soldered together and held together by temperature. It is, of course, well known that a bituminous pavement melts, runs, or even disintegrates in hot weather.

The Hassam patents were granted by the Patent Office as relating to improvements in cement concrete pavements. The patents were carefully distinguished from bituminous pavements.

Successful bituminous pavements have been laid and are in use. It is not the purpose of this brief to decry the same. By reason of the high cost of bitumen, asphalt, or tar, by reason of the expensive processes necessary to work such ingredients hot, bituminous pavements usually cost several times more than the Hassam pavement. The Hassam pavement has gone into extensive use in direct competition with these bituminous pavements and has been adopted by reason of its great strength and low cost. It is obvious that the Hassam foundation is practically an imperishable piece of stone, while of course pavements made of bituminous compounds disintegrate after a time.

Now, turning to the way bituminous pavements are made, the same are described in the Encyclopedia Britannica as follows (Page 161) :

> " A foundation of bituminous concrete is sometimes used where only a thin bed can be laid, in consequence of there being an old foundation which it is undesirable to disturb. It is made by pouring a composition of coal-tar, pitch, and creosote oil while hot over broken

stone levelled and rolled to the proper form, and then spreading a thin layer of smaller broken stone over the surface and rolling it in."

The following is contained in Baker's Roads and Pavements, Page 175:

"BITUMINOUS CONCRETE. In England a mixture of broken stone and tar, often called bituminous concrete, is sometimes used as a foundation. The only advantage claimed for it is that the pavement may be laid as soon as the foundation is completed and therefore it is more suitable for busy thoroughfares than hydraulic cement concrete. The bituminous concrete is sometimes laid as described in Sec. 709, and sometimes by spreading and rolling the broken stone, and pouring tar over the surface and then covering that with a thin layer of small stones and finally rolling. This foundation is more expensive and less reliable than hydraulic cement concrete.

"ASPHALT MACADAM. Asphalt may be used instead of coal or gas tar, but it will not adhere to the stone unless both are at a higher temperature than that of the ordinary atmosphere. For a method of heating and mixing stone and asphalt (see Sec. 600). On account of the expense asphaltic concrete is seldom used for a pavement foundation.

"695. Very recently it has been proposed to use asphalt as a binding material for crushed stone, the resultant product usually being called asphalt macadam, but sometimes, and less appropriately, bituminous macadam. Doubtless this use of asphalt has been suggested by a former and similar use of coal tar (see Sec. 700). Asphalt concrete would not be an inappropriate name. There are two slightly different methods of applying the asphalt, both of which have been patented. They will be referred to as Warren's and Whinery's after the inventors."

This description then goes on to describe Warren's method of making a bituminous pavement called "*bitulithic*," which,

so far as the foundation is concerned, consists in mixing stone and melted asphalt in a heater. "The mixture of asphaltic cement and stone *is spread while still hot*" (page 177). This is substantially the same method described in the Warren patent, No. 675,430, which is fully discussed by Mr. Browne, pages 225, 226.

The Whinery method appears never to have been used at all.

Mr. Gordon, *defendants'* own witness, clearly points out the distinction between the methods of using hot asphalt, and the Hassam method of grouting with cement (pages 143, 144).

> "With the Hassam they have a kind of a mixer for mixing the sand and cement together, a machine. They *pour it* on to the rock until they fill up all the interstices and spaces full to the surface and then that is rolled again, and they go over it or brush it after it is rolled. In the case of the bitulithic they have a mixture, sometimes gravel and sometimes crushed rock, practically the same material for the base as the other. They have a mixture of asphalt and *while it is hot they put it on about two inches thick.* They roll the base until it is supposed to be six inches deep after it is completed. Four-inch base and a two-inch top dressing and on top of that they put the asphalt mixture.
>
> "Q. Do you know whether there is any difference between the filling put on the two pavements?
>
> "A. Yes, there is. The bitulithic is similar to the cement grout except it is asphalt or bitumen or coal tar, and in the other case they use Portland cement. It is put on as a kind of a sticker, to cement or stick the crushed rock together."

It is open to these defendants to make bituminous pavements by the methods described in these Encyclopedias. It is open to the City of Portland to put in any of these old bituminous pavements without let or hindrance from the complainants.

The cement concrete pavement of Hassam is decidedly a novel and meritorious pavement as compared with any of the bituminous pavements. The Hassam pavement is as distinct from the bituminous pavements as is steel from rubber.

The Circuit Court of Appeals for the Sixth Circuit sustained one of the patents on the Warren bitulithic pavement simply on the point that Warren by using graded stone for the top dressing, was able to make a strong wearing surface which would not require so much of the bitumen or asphalt as the old processes (see Warren Bros. Co. vs. City of Owosso, 166 Fed. Rep., 309).

The Hassam process and pavement is a great deal more of an improvement and advance in the art of making a cement concrete pavement than Warren's was in the art of making bituminous pavements.

As shown by the proofs, the use of cement concrete pavements prior to Hassam was almost negligible. Practically all of the literature and patents offered by the defendants relating to cement concrete pavements, describe experiments and abandoned ideas. The defendants have not shown that there is a mile of cement concrete pavement in use in the United States outside of the Hassam.

The United States Supreme Court in the case of *Carnegie Steel Co. vs. Cambria*, 183 U. S., 983, sustained a patent on a process of making steel which met with great success, over somewhat similar processes employed in making cast iron. The process of making steel and cast iron are much closer than the processes of making bituminous pavement and the Hassam method of making cement concrete pavements.

Mr. Hassam's inventions have brought the art of making cement concrete pavements to success, and no reason is seen why the complainant should not be given the benefit of the protection of the letters patent granted by the Government upon which they made their investment.

C. & A. Potts & Co. vs. Creager, 155 U. S., 596.

" Upon the other hand, we have recently upheld a patent to one who took a torsional spring, such as had been previously used in clocks, doors, and other articles of domestic furniture, and applied it to telegraph instruments, the application being shown to be wholly new. Western Electric Co. v. La Rue, 139 U. S., 601 (35:294). So, also, in Crane v. Price, Webster, Pat. Cas., 409, the use of anthracite coal in smelting iron ore was held to be a good invention, inasmuch as it produced a better article of iron at a less expense, although bituminous coal had been previously used for the same purpose. See also, Steiner v. Heald, 6 Exch., 607.

" Indeed, it often requires as acute perception of the relations between cause and effect, and as much of the peculiar intuitive genius which is a characteristic of great inventors, to grasp the idea that a device used in one art may be made available in another, as would be necessary to create the device *de novo*. And this is not the less true if, after the thing has been done, it appears to the ordinary mind so simple as to excite wonder that it was not thought of before. The apparent simplicity of a new device often leads an inexperienced person to think that it would have occurred to any one familiar with the subject; but the decisive answer is that with dozens and perhaps hundreds of others laboring in the same field, it had never occurred to any one before. The practiced eye of an ordinary mechanic may be safely trusted to see what ought to be apparent to every one. As was said by Mr. Justice BRADLEY, in Webster Loom Co. v. Higgins, 105 U. S., 580, 591 (26 : 1177, 1181): 'Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result never attained before, it is evidence of invention.' "

Expanded Metal Co. vs. Bradford, 214 U. S., 365:

> " It is suggested that Golding's improvement, while a step forward, is nevertheless only such as a mechanic skilled in the art, with the previous inventions before him, would readily take; and that the invention is devoid of patentable novelty. It is often difficult to determine whether a given improvement is a mere mechanical advance, or the result of the exercise of the creative faculty amounting to a meritorious invention. The fact that the invention seems simple after it is made does not determine the question; if this were the rule, many of the most beneficial patents would be stricken down. It may be safely said that if those skilled in the mechanical arts are working in a given field, and have failed, after repeated efforts, to discover a certain new and useful improvement, that he who first makes the discovery has done more than make the obvious improvement which would suggest itself to a mechanic skilled in the art, and is entitled to protection as an inventor."

Wickelman vs. A. B. Dick Co., 88 Fed., 264, 265 (Circuit Court of Appeals, Second Circuit):

> " We entertain no doubt that, if the patentee was the first to make a transmitting sheet which, by reason of the peculiar characteristics of the basic material, and of the coating, was new and useful, what he did involved invention, and entitled him to a patent. Inventive thought was involved in the conception that materials could be employed that would dispense with cutting or puncturing instrumentalities altogether. Even if what he did was merely to employ a basic material differing in the degree of porosity and toughness, and a coating differing in the degree of softness, from that which had been previously used, he accomplished thereby a new result. Each of these modifications was necessary to successfully introduce the new principle, which differentiated his production from the stencil sheets of the prior art."

* * * * * *

> "The case is one for the application of the doctrine, well settled in the law of patents, that novelty is not negatived by a prior accidental production of the same thing, when the operator does not recognize the means by which the accidental result is accomplished, and no knowledge of them, or of the method of its employment, is derived from it by any one (Pittsburg Reduction Co. v. Cowles Electric Smelting & Aluminum Co., 55 Fed., 307; Chase v. Fillebrown, 58 Fed., 377; Topliff v. Topliff, 145 U. S., 161, 12 Sup. Ct., 825; Tilghman v. Proctor, 102 U. S., 707, 711).

Diamond Patent Co. vs. S. E. Car Co., C. C. A. Ninth Circuit, October 13, 1914, 217 Fed. Rep., 400–405:

> "The novelty of an invention is not negatived by a prior useless process or thing, nor is anticipation made out by a device which might, with slight modification, be made to perform the same function. The invention must have been complete, and capable of producing the result. One should not be deprived of the results of a successful effort merely because some one else has come near it."

Conclusion.

Counsel begs to apologize for the length of this brief. This has been brought about by the great importance of the case, by the scattering nature of the defenses, by the fact that counsel has had to prepare this brief (owing to his residence in Massachusetts) without the opportunity of seeing appellant's brief to answer every contention, and because the decisions have been freely quoted from.

In this connection, attention is called to the fact that, with the single exception of the case of Warren vs. Montgomery (in which Judge JONES commented upon a piracy of the Warren patent), all excerpts have been made from decisions of Courts of last resort in patent cases, namely, the Supreme

Court of the United States and the United States Circuit Courts of Appeal.

The United States Patent Office officials, the most highly trained experts on the subject, have certified to the existence of patentable matter and have established public grants based on Mr. Hassam's inventions.

Complainants in good faith have invested over a million dollars in establishing a pavement industry under said patents and have made honest and extensive efforts to introduce the inventions into use.

Hassam pavement has been recognized throughout the United States as a new pavement of great value and has been gladly adopted by municipalities who have willingly paid the reasonable royalty asked by the complainants.

Who is it that asks this Court to destroy and confiscate this industry built up in good faith under the patent laws of the United States? No municipality or user of the Hassam pavement has protested against the grants. The parties interested in the defense are unlawful appropriators of complainants' vested property rights, who have knowingly and willfully pirated complainants' patents and taken the chances of litigation. Defendants are competitors of complainants who are anxious to appropriate to their own use some of the commercial advantages which rightfully belong to complainants, as the result of the inventive skill of Mr. Hassam, and the business founded thereon involving years of patient work and a large expenditure of money.

In view of this situation, why should a Court

of equity hesitate for a minute to apply to the case at bar the rule established by a multitude of decisions, finding expression for illustration, in the case of O'Rourke Engineering Const. Co. vs. McMullen (Circuit Court of Appeals, Second Circuit, 160 Fed. Rep., 933-938).

> " The principal question in such case is : Has the patentee added anything of value to the sum of human knowledge, has he made the world's work easier, cheaper and safer, would the return to the prior art be a retrogression ? When the court has answered this question, or these questions in the affirmative, the effort should be to give the inventor the just reward of the contribution he has made. The effort should increase in proportion as the contribution is valuable. Where the court has to deal with a device which has achieved undisputed success and accomplishes a result never attained before, which is new, useful and in large demand, it is generally safe to conclude that the man who made it is an inventor.
>
> * * * * * *
>
> " The keynote of all the decisions is the extent of the benefit conferred upon mankind. Where the court has determined that this benefit is valuable and extensive it will, we think, be difficult to find a well considered case where the patent has been overthrown on the ground of nonpatentability."

Is there any substantial evidence anywhere in defendants' case to warrant or justify the Court in striking down the Hassam patents in suit? Is it not the bounden duty of the Court to sustain the presumption of the validity of the patents,

which presumption is supported by the great weight of evidence and has been so tremendously strengthened by the commercial results arising out of great utility; a presumption which the law has stated, "can only be overcome by convincing proof of a positive character necessary to convict of crime", which proof is produced by the defendants who have assumed burden of proof and against whom the Supreme Court of the United States says, "every reasonable doubt should be resolved."

It would be difficult to conceive of a case where the tests of validity applied by the Courts are more squarely met than in the case at bar. The defendants have raised practically every defense known to the patent law. It would be difficult to find a case where the evidence is more incomplete on any defense. Plain manifest justice protests against striking down the Hassam patents.

It is therefore respectfully asked that the decree of the lower Court be affirmed.

Respectfully submitted,

LOUIS W. SOUTHGATE,

CAREY AND KERR,

Solicitors and Counsel for Complainants-Appellees.

HASSAM PAVING CO. ET AL. VS. CONSOLIDATED CONTRACT CO. ET AL.
(District Court, D. Oregon. May 4, 1914.)

CAREY & KERR, of Portland, Or., and LOUIS W. SOUTHGATE, of Worcester, Mass., for complainants.

JESSE STEARNS and JOHN H. HALL, both of Portland, Or., for defendants.

BEAN, District Judge. The time at my disposal will not permit the formation of an elaborate and exhaustive opinion, and I can do nothing more than state my conclusions briefly.

The suit is brought to restrain infringement of letters patent granted to the complainants' assignor for what is known as Hassam pavement. The defense rests on the ground that the patents in question are invalid (1) for want of invention or discovery, and (2) that the defendants have a license to use complainants' patent without royalty because the city of Portland at the request of its agent, specified that the pavement covered by complainants' patent should be used on a certain street in the city, and since the ordinances of the city require that contracts for street improvement shall be awarded to the lowest bidder, and defendant contract company obtained such contract by underbidding its competitors, it is entitled to use the complainants' patent without being liable for infringement thereof.

The granting of letters patent is *prima facie* evidence that the patentee is the first inventor of the device or discoverer of the art or process described in the patent and of its novelty. The burden of proof is therefore upon one who assails a patent for want of novelty, and it is said every reasonable doubt should be resolved against him (San Francisco Cornice Co. vs. Beyrle, 195 Fed., 517, 115 C. C. A. 426).

The patents in question are for an art or process and the methods of carrying it into effect and making it useful, and for claims laid directly on the pavement itself. The manner of constructing the pavement, as described in the patents in brief, is: First, covering the subgrade of the street or road

with a layer of uncoated broken stone and compressing the same by a heavy steam roller, thus reducing the voids to a minimum. Second, after the stone has been thus compressed, it is grouted by pouring over it in place a mixture of cement, sand and water and agitating the same by a steam roller during the process of grouting until the grout flushes to the surface, thus expelling the water and filling up the voids or spaces between the stones with grout. And, third, applying and compressing a wearing surface of uncoated fine or pea stones while the grout is still fresh and before the cement has had a chance to set or harden, so that the surface material is united to the foundation by the cement grout. The pavement, as thus constructed, is then allowed to stand without use until the cement hardens. The result is the building in the street or road itself of a solid monolith or stone structure, differing in this respect from any other known pavement.

It may be and probably is true that every one of the elements going to make up the complainants' pavement had been employed before in road or street improvements, or in other mechanical ways, but not in the same combination and put together in the same manner as Hassam has combined and arranged them. I am of the opinion, therefore, that the defense of want of novelty is not satisfactorily made out. A combination of old elements may be the result of invention and is patentable. National Tube Co. vs. Aiken, 163 Fed., 254, 91 C. C. A., 114; Beryle vs. S. F. Cornice Co. (C. C.), 181 Fed., 692; S. F. Cornice Co. vs. Beyrle, *supra;* Elizabeth vs. Pavement Co., 97 U. S., 126, 24 L. Ed., 1000.

I am unable to distinguish this case in principle from Elizabeth vs. Pavement Co., *supra*, sustaining the Nicholson patent for pavement, or Warren Bros. Co. vs. City of Owosso, 166 Fed., 309, 92 C. C. A., 227, holding valid the Warren patent.

The prior patents relied upon as showing an anticipation of the Hassam patent differ materially from those in suit and do not constitute an anticipation thereof. In the Murphy

patent there is no provision for rolling the stone foundation before the grouting is applied, no grouting consisting simply of cement, sand, and water, no agitation or disturbance of a previously rolled stone foundation to cause the grouting to fill out the voids and expel the air, and no continuous grouting occupying the voids between the foundation stone and serving to bind the surface layer of small stones to the foundation. Moreover, although the Murphy patent was issued in 1881, there is no evidence that any pavement was ever laid under it. It never came into general or extensive use. It is a mere paper patent and should not be held to invalidate the complainants' patent, which the evidence shows to be in common and extensive use (Robins Conveying Belt Co. vs. American Rd. Mach. Co., 145 Fed., 923 ; 76 C. C. A., 461 ; Hall Signal Co. vs. Gen. Ry. Sig. Co., 169 Fed., 290 ; 94 C. C. A., 580 ; American Graphophone Co. vs. Leeds & Catlin, 170 Fed., 327 ; 95 C. C. A., 511). The Bayard, Haggerty and Warren patents relate to roads or pavements made in part of asphalt, tar or some bituminous composition, and, so far as I can see, have no substantial bearing upon the patents in question.

The prior publication consists of extracts from encyclopedias, dictionaries, scientific works and the like, describing various kinds of roads and their construction, and defining some of the elements going to make up the complainants' patent, but they do not describe the complete plant in such a full and intelligible manner as to enable persons skilled in the art to which it relates to make or construct the pavement without assistance from the patent, and are therefore insufficient to invalidate the patents (Seymour vs. Osborne, 11 Wall., 516 ; 20 L. Ed., 33 ; Cohn vs. U. S. Corset Co., 93 U. S., 366 ; 23 L. Ed., 907).

The evidence as to the alleged prior use consists of the oral testimony of the witness Gordon describing, or attempting to describe, some cement pavements or walks which he assisted in laying in England some 40 years ago, and the McClintock experiment. The construction of the pavement

described by Gordon differs materially from the process described in complainants' patent, and, moreover, there is no evidence that it has ever been patented or described in any printed publication, and therefore cannot affect the validity of complainants' patents. R. S., § 4923 (U. S. Comp. St., 1901, p. 3396); Westinghouse Mchy. Co. vs. Gen. El. Co., 207 Fed., 75—C. C. A. McClintock was the city surveyor of Rochester, N. Y., in 1893. Owing to the unsatisfactory condition of the streets, he asked and obtained permission from the city authorities to try an experiment on one of the streets. The experiment was not satisfactory, but, as Mr. McClintock says, "demonstrated that I might have something of practical value, but that I had not carried it far enough or experimented enough at length to demonstrate its practical value." The pavement laid by McClintock was never used elsewhere or tried again. It comes clearly within the category of an abandoned experiment, which is not sufficient in law to anticipate a successful patent. The Cornplanter Patent, 23 Wall., 181, 23 L. Ed., 161; Smith vs. Goodyear Dental Vulcanite Co., 93 U. S., 486, 23 L. Ed., 952; Deering vs. Winona Harvester Works, 155 U. S., 285, 15 Sup. Ct., 118, 39 L. Ed., 153; King Co. Raisin & Fruit Co. vs. U. S. Consol. S. R. Co., 182 Fed., 59, 104 C. C. A., 499.

The fact that the city of Portland saw fit to specify Hassam pavement for one of its streets at the request of the holder of the patent does not excuse one who underbid the owner of the patent, for an infringement thereof any more than if the owner of a rock quarry should induce the city to specify rock for use in a street of a quality to be obtained only from his quarry would justify the successful bidder in appropriating the rock without paying for it.

Injunction will issue as prayed for, and the cause be continued for an accounting. The same order will be entered in the suit against the Reliance Construction Company.

[12387]

No. 2505

In the United States Circuit Court of Appeals

FOR THE NINTH CIRCUIT

CONSOLIDATED CONTRACT COMPANY and
PACIFIC COAST CASUALTY COMPANY,
Appellants

vs.

HASSAM PAVING COMPANY and
OREGON HASSAM PAVING COMPANY,
Appellees

Petition for Re-Hearing

JESSE STEARNS,
JOHN H. HALL,
For Appellants

LOUIS W. SOUTHGATE,
CAREY & KERR,
For Appellees

No. 2505

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HASSAM PAVING COMPANY and
OREGON HASSAM PAVING COMPANY,
Appellees

Petition for Re-Hearing

To the Honorable Judges of the United States Circuit Court of Appeals for the Ninth Circuit.

Come now your petitioners, the above named appellants, and respectfully petition your Honorable Court to set aside your decree of affirmance heretofore made in this cause, and to grant your petitioners a re-hearing upon the following grounds:

I.

1. Because there is no allegation in the Bill of Complaint, and no proof in the record showing, or tending to show, that your petiioner, the Pacific Coast Casualty Company, committed any infringement of the patents set forth in the Bill of Complant.

2. Because there is no allegation in the Bill of Complaint, or any proof in the record showing, or tending to show, that at the time the Pacific Coast Casualty Company became surety on the bond set forth in the Bill of Complaint, and given to the City of Portland, conditioned upon the faithful performance of the contract of the Consolidated Contract Company, that the Pacific Coast Casualty Company had any knowledge that the pavement contracted for constituted any infringement of the patents mentioned in the Bill of Complaint.

3. Because there was no ground alleged in the Bill of Complaint, nor any proof offered, upon which to base a decree against the Pacific Coast Casualty Company for an accounting, or for costs of the suit, either in the District Court, or in your Honorable Court.

The allegations in regard to the bond furnished to the City of Portland, and the bond itself as set forth on pages 33-36 of the record, clearly show that the only obligation assumed by the Pacific Coast Casualty Company was for the faithful performance of the work undertaken by the Consolidated Contract Company in its contract with the City of Portland; and that the only connection the Pacific Coast Casualty Company had with the matter was as surety upon the bond given to the

City of Portland, and it is so stated in the statement of the case, as appears on page 5 of the Opinion (typewritten) of this Court.

The pavement is referred to as "Hassam Pavement" only once, and that appears in the detailed bid (record, page 29), and it is nowhere referred to in the contract or in the bond as "Hassam Pavement," and no showing was made on behalf of the complainants that the Surety Company had any knowledge of the kind of pavement that was to be laid, or any knowledge of any infringement, or claim of infringement, made, or attempted to be made, against the rights of the complainants or either of them, under the patents set forth in the Complaint; nor that the Pacific Coast Casualty Company had any knowledge or belief that an arrangement had not been made for royalty to be paid by the Consolidated Contract Company for the laying of said pavement.

Furthermore, there is no legal obligation upon a mere surety for the performance of a contract to investigate or ascertain whether the contractor is about to use any patented material or process, or whether, in the performance of his contract, he may or may not be about to infringe or violate the right of some third party.

Neither counsel for appellants nor for appellees specifically called the attention of your Honorable Court to the question of the Pacific Coast Casualty Company's liability in the cause, and therefore your petitioners assume that the decree of the District Court was inadvertently affirmed by your Honorable Court as to the Pacific Coast Casualty Company; and for

that reason, and in order that the matter may be more fully presented, your petitioners deem that a re-hearing upon this point is proper and necessary to protect the rights of said Corporation.

II.

Your petitioners further request a re-hearing because it appears from the Opinion of your Honorable Court that the uncontradicted testimony of the witnesses Gilman and Gordon showing public use of the same process described in complainants' patent long prior to the granting of such patents, was inadvertently overlooked by your Honorable Court.

Claim 1 of Letters Patent No. 819,652, and alleged to have been infringed by appellants, is as follows:

> "A road or pavement consisting of a bottom layer of hard rolled uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, and a suitable surface placed on said grout."

It appears from the specifications of this patent that broken stone or gravel is spread to a proper depth and rolled with a steam roller, or *compressed by any suitable means.* The testimony of Gilman and Gordon show that broken, uncoated stone was placed upon the ground and rolled with a hand-roller, or compressed with a tamper, and that then grout was spread thereon filling the voids; and that this process was used not only by the Russian who laid such a pavement in front of the blacksmith shop, but that it was used for basement floors and foundations.

This testimony is not mentioned in the Opinion of your Honorable Court, and your petitioners therefore assume that it was inadvertently overlooked, and for that reason your petitioners respectfully request a rehearing in order that the matter may be more fully discussed and brought to your Honors' attention.

It was conceded by the learned counsel for appellees in his argument before the District Court, that the process used by McClintock in laying the pavement in the City of Rochester, in 1893, was open to use by anybody; and this concession is apparently inconsistent with the theory of an abandoned experiment, the use having been public and having been fully described in a printed publication, and the public generally are therefore entitled to the benefit of such use and such publication; and the unrestricted use of a pavement made of uncoated stone, rolled and then grouted, without agitating the mass by a roller after the grouting, should be declared open to the public generally, and that right should be pointed out in the decree of your Honorable Court.

And your petitioners will ever pray.

Dated this 6th day of November, 1915.

JESSE STEARNS,
JOHN H. HALL,
Solicitors.

Being of counsel for appellants and petitioners herein, I hereby certify that the foregoing petition is made in good faith and is well founded in right and reason and is not interposed for delay.

JESSE STEARNS.

No. 2505.

IN THE

United States Circuit Court of Appeals

FOR THE NINTH CIRCUIT.

CONSOLIDATED CONTRACT COMPANY, and PACIFIC COAST CASUALTY COMPANY,
Appellants,

vs.

HASSAM PAVING COMPANY, and OREGON HASSAM PAVING COMPANY,
Appellees.

APPELLEES' REPLY MEMORANDUM UPON APPELLANTS' PETITION FOR REHEARING

LOUIS W. SOUTHGATE,
CAREY & KERR,
Solicitors for Appellees.

Filed this.....day of December, A. D. 1915.
FRANK D. MONCKTON, Clerk.

By....., Deputy Clerk.

No. 2505.

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Appellees.

APPELLEES' REPLY MEMORANDUM UPON APPELLANTS' PETITION FOR REHEARING

The Petition for Rehearing should be denied if for no other reason than that:

I.

The points raised are not covered by any assignment of error.

II.

When the defendant, Pacific Coast Casualty Company, gave bond it was for the faithful performance by the defendant, Consolidated Contract Company, of a contract to lay Hassam pavement specified by name

(Record, Vol. I, p. 29) and the details of Hassam's patented process were specified by ordinance and made part of the contract (Record, Vol. I, pp. 19 to 23, 29, 33 and 34), all of which has been admitted by the defendants' surety company.

The Answer admits (Record, Vol. I, p. 59) the execution of the agreement and the execution of the bond by the defendant Surety Company, all as set out in the Amended Bill of Complaint.

As to the allegations in the Bill of infringement by the Surety Company, attention is called to pages 17, 36 and 37 of the Record. It is clear that in financially backing the Consolidated Contract Company the Pacific Coast Casualty Company aided and abetted the former in constructing the infringing pavement and profited by the infringement. The former could not do so without the latter's bond. The case is directly analogous to one where a party supplies another with funds that the latter may do certain specified infringing or otherwise unlawful acts. It is not so much the existence of the suretyship relation as it is the *entering into* that relation that so clearly aided and abetted the Consolidated Contract Company in infringing the patent of the appellees; in other words, the entirety of the acts of the two defendants made them infringers.

III.

It is an elementary law that all parties who aid or abet in the commission of a tort are individually, as well as jointly, liable. The infringement of a patent

is a tort. The defendants' surety company is in the situation of a contributory infringer.

> *Thomson-Houston Electric Co.* vs. *Ohio Brass Co.,* 80 Fed. 712.

Before Taft and Lurton, Circuit Judges, and Clark, D. J., Taft, J., says, p. 721: "An infringement of a patent is a tort analogous to trespass or trespass on the case. From the earliest times, all who take part in a tresspass, either by actual participation therein, or by aiding and abetting it, have been held to be jointly and severally liable for the injury inflicted. * * * If this healthful rule is not to apply to trespass upon patent property, then, indeed, the protection which is promised by the constitution and laws of the United States to inventors is a poor sham."

Townsend, District Judge, in *Thomson-Houston Electric Co.* vs. *Kelsey Electric Railway Specialty Co.,* 72 Fed. 1016 at 1017, says, in this connection:

> "Contributory infringement has been well defined as 'the intentional aiding of one person by another in the unlawful making or selling or using of the patened invention.' Howson, Contrib. Infringe. Pat., p. 1."

The same statement of the law is made verbatim by Sanborn, Circuit Judge, in *New York Scaffolding Co.* vs. *Whitney,* 224 Fed. 452 at 459, and is quoted by Mr. Justice Lurton in *Henry* vs. *A. B. Dick Co.* in 224 U. S. 1, at page 34,

That this rule of the general tort law applies to the tort of infringement is also recognized by the leading

text writers. For instance, Robinson on Patents says (Section 897):

> "Any person who participates in any wrongful appropriation of the invention becomes thereby a violator of the rights protected by the patent. Such participation may be direct or indirect; *it is sufficient if it promotes in any degree* the unauthorized manufacture, use or sale of the invention."

IV.

It is immaterial that the Pacific Coast Casualty Company may have had no actual knowledge that the pavement contracted for constituted any infringement. The Pacific Coast Casualty Company must have known that it made itself liable for the construction of "Hassam Pavement," as the following facts will show:

The Consolidated Contract Company's proposal to the City of Portland specified "Hassam pavement, per sq. yd. $1.75, total $23,272.90," which is by far the one big and important item in the bid which totaled $26,610.49 (Record, Vol. I, p. 29). This proposal was embodied in the contract as the "items of material and work" (Record, Vol. I, p. 28) and the Pacific Coast Casualty Company's bond guarantees that the Consolidated Contract Company will "perform all the work embraced by said Contract" (Record, Vol. I, p. 34). Not only was it thus called by name but the very infringing specifications were set forth in Ordinances 21,172 and 22,941 of the City of Portland (Record,

Vol. I, pp. 23, 24), which were referred to in the contract and the bond (Record, Vol. I, pp. 24 and 34) and in the Resolution No. 3031 of the Council of the City of Portland (Record, Vol. I, p. 22), the resolution for the improvements in question, the construction called for is described as "Hassam Pavement" and this resolution was the basis for the ordinances referred to. In any event, the Pacific Coast Casualty Company cannot claim forgiveness because it knew not what it did.

"The intention with which an act of infringement is performed is immaterial." Robinson on Patents, Section 901 and the cases cited therein.

All persons are bound to take notice of a patent duly issued.

> *Nat. Car Brake Shoe Co.* vs. *Terre Haute Car & Manufacturing Co.,* 19 Fed. 514 at 520.

Furthermore, the Consolidated Contract Company expressly admits notice of infringement (Record, Vol. I, p. 56) and the Pacific Coast Casualty Company admits it by failing to deny, which, by itself, is conclusive of this matter.

V.

The third point under Part I of the Petition for Rehearing and Part II thereof, because of their obvious weakness, are not deemed to require comment by the appellees.

It therefore appears that no substanial or valid reasons for reopening this cause have been or can be offered and that the Petition for Rehearing should be denied.

Respectfully submitted,

LOUIS W. SOUTHGATE,
CAREY & KERR,

Solicitors for Appellees.

No. 2521

United States

Circuit Court of Appeals

For the Ninth Circuit.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Appellant,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE & COMPANY, a Common Name Under Which More Than Two Persons are Associated in Business and Transact Such Business,

Appellees.

Transcript of Record.

Upon Appeal from the United States District Court for the Northern District of California, Second Division.

Filmer Bros. Co. Print, 330 Jackson St., S. F., Cal.

No. 2521

United States

Circuit Court of Appeals

For the Ninth Circuit.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Appellant,

vs.

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INDEX TO THE PRINTED TRANSCRIPT OF RECORD.

[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur. Title heads inserted by the Clerk are enclosed within brackets.]

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In the United States District Court for the Northern District of California.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Plaintiff,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE AND COMPANY, a Common Name Under Which More Than Two Persons are Associated in Business and Transact Such Business,

Defendants.

Bill in Equity.

Now comes the above-named plaintiff and complains of the defendants above named, and for cause of action alleges:

I.

That plaintiff now is, and ever since the 9th day of April, 1913, has been, a corporation duly organized and existing under and by virtue of the laws of the State of Arizona.

II.

That the defendants Joseph Craig and Roy M.

Pike are each of them residents and citizens of the State of California.

III.

That the defendants William A. Brady, E. I Phillips, Archibald S. White, C. L. Parmalee, and George H. Hull, Jr., are each and all residents and citizens of the State of New York.

IV.

That White and Company is a common name under which the [1*] defendants Archibald S. White, C. L. Parmalee, George H. Hull, Jr. and Roy M. Pike, and other persons whose names are unknown to plaintiff, were on the first day of June, 1911, ever since have continued to be, and still are, associated in business, and that the said defendants Archibald S. White, C. L. Parmalee, George H. Hull, Jr., and Roy M. Pike, together with said other persons, on the said 1st day of June, 1911, were, and ever since have continued to be, and still are, transacting such business under said common name in the State of New York and in the State of California, and elsewhere. That all of the persons so associated in business are citizens and residents of States of the United States of America other than the State of Arizona. That the business in which the said White and Company has, during all of said time, and still is so engaged as aforesaid, is, among other things, the business of buying, selling, and dealing in stocks and bonds, and in underwriting bonds, and selling and disposing of the same, examining into business propositions, involving water, power and irrigation,

*Page-number appearing at foot of page of original certified Record.

dams, reservoirs, poundings, ditches, flumes, watersheds, water supplies, and possibilities for the storage, sale and distribution of waters for irrigation, domestic, electrical generation and power purposes, and, if found promising, to advance the necessary money to finance the securing and organization thereof into a shape and condition to invite capital, and, to that end, to cause corporations to be organized, properties, real, personal and mixed, to be conveyed to such corporations, and to cause such corporations to create bonded indebtednesses, and to purchase, underwrite and place the said bonds, and to receive as a bonus or commission therefor a discount upon such bonds, either in the form of money or of additional bonds, and to receive preferred and common stocks as a bonus or commission for their services in effecting the organization and the [2] financing of such projects or enterprises and for their participation and services in and about the transaction in which they so engage.

V.

That the defendant Oakland Bank of Savings now is, and at all the times hereinafter mentioned has been, a corporation duly organized and existing under and by virtue of the laws of the State of California.

VI.

That the defendant Capay Ditch Company now is, and at all the times hereinafter mentioned has been a corporation duly organized and existing under and by virtue of the laws of the State of California, and that said corporation, at all the times herein-

after mentioned, has owned, controlled, operated and managed, for compensation, a water system within the State of California, and has owned, controlled, operated, and managed, for compensation, canals, structures, appliances, and other real estate fixtures, and personal property, in connection with and to facilitate the diversion, development, storage, supply, distribution, sale, furnishing, and carriage of water for irrigation.

VII.

That the defendant Yolo County Consolidated Water Company now is, and at all the times hereinafter mentioned has been, a corporation duly organized and existing under and by virtue of the laws of the State of California, and that said corporation, at all the times hereinafter mentioned, has owned, controlled, operated, and managed, for compensation, a water system within the State of California, and has owned, controlled, operated, and managed, for compensation, canals, structures, appliances, and other real estate fixtures, and personal property, in connection with and to facilitate the diversion, development, [3] storage, supply, distribution, sale, furnishing and carriage of water for irrigation.

VIII.

That the defendant Yolo Water and Power Company now is, and at all times since December 11th, 1911, has been, a corporation duly organized and existing under and by virtue of the laws of the State of California, and that said corporation was organized for the purpose, among other things, of owning,

controlling, operating, and managing, for compensation, a water system within the State of California, and for the purpose of owning, controlling, operating, and managing, for compensation, canals, structures, appliances, and other real estate, fixtures, and personal property, in connection with and to facilitate the diversion, development, storage, supply, distribution, sale, furnishing, and carriage of water for irrigation.

IX.

That in the County of Lake, State of California, there is situate a lake known as and called Clear Lake, which said lake is 22 miles long, or thereabouts, and 8 miles wide, or thereabouts; that the outlet of said Clear Lake is a stream known as and called Cache Creek, which said stream flows in a general southerly and easterly direction through the Counties of Lake, Colusa and Yolo in the State of California, finally discharging and emptying into the Sacramento River in the County of Yolo, State of California.

That in the winter season, and particularly in times of flood and seasonal rainfall, the said lake rises to a height of more than ten (10) feet above low-water mark, as said low-water mark is established by the Geological Survey of the United States Government. [4]

That the difference in the quantity of the water in the said Lake between said low-water mark and said high-water mark is 22,446,000,000 cubic feet of water.

That during the season of high water, storms, and seasonal rainfall, in the Autumn, Winter and Spring

of each year, vast quantities of water from the said lake are discharged through Cache Creek, the said outlet of the said Clear Lake, and into the said Sacramento River, where they are lost and wasted.

That lying within the Counties of Yolo, Colusa, and Solano in said State of California are two hundred thousand (200,000) acres of land, or thereabouts, which said lands are arid and in need of irrigation, and the value of which lands will be largely increased if water for irrigation purposes is supplied to them; that if the water thus discharged through the said Cache Creek can be stored and impounded in the said lake, by raising the said lake to a height of ten (10) feet above the said established low-water mark, all of the said area can be irrigated therewith by and through a system of canals leading from a proper and convenient point on said Cache Creek.

That the said Clear Lake is situate at a mean elevation of thirteen hundred twenty-five (1325) feet above the level of the sea. That the said water of the said lake, if so stored and conserved, will not only be available for irrigation as aforesaid, but will also be available for electrical power, without the use for the one purpose in any manner interfering or conflicting with the use for the other purpose and that between forty thousand (40,000) and forty-five (45,000) thousand electrical horse-power can be produced during the entire year by such use of said waters, and a much greater amount can be produced thereby during the period of seasonal rainfall. [5]

X.

That in the year 1906, three corporations were organized for the purpose of purchasing, acquiring, taking over, and utilizing the aforesaid lake, creek, and waters for the purposes aforesaid. That one of said corporations was designated and called Central Counties Land Company. That another of said corporations was designated and called California Industrial Company, and that the third of said corporations was designated and called Central California Power Company. That it was intended that the said corporations last named should work harmoniously the one with the other. That it was intended that the said Central Counties Land Company should acquire and own all of the land fronting upon the said lake, above the aforesaid ten (10) foot level of said lake, above the established low-water mark. That it was intended that the said California Industrial Company should own the riparian rights in said lake, and the fee simple or overflowage rights to all of the lands around the borders of the said lake below the aforesaid ten (10) foot level; that said California Industrial Company should erect a dam at or near the mouth or outlet of the said Clear Lake and that it should sell and dispose of the water to be conserved and impounded therein, for power, irrigation, domestic, and other public uses and purposes. That it was intended that the said Central California Power Company should acquire from the said California Industrial Company the right to use the said waters for the generation of electricity and electrical power, and, to that end, that it should

build all necessary ditches, flumes, tunnels, canals, and power-houses, and should install such hydro-electrical machinery and such transmission lines as would properly apply the electrical energy so to be produced, to public uses. [6]

XI.

That for a number of years prior to the organization of said three corporations last above named, the defendant Yolo County Consolidated Water Company had diverted the natural flow of said Cache Creek, during the summer, dry, or irrigating season, for the purpose of irrigating lands in Yolo County, State of California, and had irrigated therewith in an inefficient and unsatisfactory manner from five thousand to ten thousand acres of land, and had built fifty (50) miles, or thereabouts, of canals, and that divers farmers or farming neighborhoods had built laterals leading to said canals to the extent of about two hundred (200) miles in length. That the quantity of water supplied during the irrigating season, through said canals and laterals, varied greatly at different times in said season, but at no time exceeded or ever has exceeded one hundred (100) second feet, and frequently no water whatever reached said laterals.

XII.

That on the 19th day of January, 1907, the defendant Capay Ditch Company, a corporation, owned 8,789 shares of the capital stock of the defendant Yolo County Consolidated Water Company out of a total of 9,924 shares, or thereabouts, which had been issued by the said defendant Yolo County Consoli-

dated Water Company, and the balance of the said shares issued, save sixty (60) or thereabouts, were owned in divers proportions by the Bank of Woodland, a corporation, Stephens Agricultural and Live Stock Company, a corporation, Kate S. Craig, J. L. Stephens, L. D. Stephens, J. J. Stephens, P. N. Ashley, N. A. Hawkins, and the defendant Joseph Craig.

XIII.

That the said corporations Central Counties Land Company, California Industrial Company, and Central California Power [7] Company proceeded to carry out the plans herein aforesaid, and, to that end, between the fall of the year 1906 and the 1st day of June, 1911, purchased lands and overflowage rights in and about said Clear Lake, caused the water locations to be made, pipe, tunnel, ditch, canal, and conduit lines to be surveyed, and did and performed other acts and things in and about the said enterprise, at a total cost of one million ($1,000,000.00) dollars, or thereabouts.

XIV.

That on said 19th day of January, 1907, one E. P. Vandercook made and entered into an agreement in writing with the said defendants Capay Ditch Company and Joseph Craig, and with the other owners of the said capital stock of said defendant Yolo County Consolidated Water Company, hereinabove named, which said agreement was and is in the words and figures following, to wit: [8]

[Agreement, January 19, 1907, Between E. P. Vandercook and Capay Ditch Co. et al.]

THIS AGREEMENT made and entered into this

19th day of January, 1907, by and between E. P. VANDERCOOK, the party of the First Part, and the CAPAY DITCH COMPANY, a Corporation, the STEPHENS AGRICULTURAL AND LIVE STOCK COMPANY, a corporation, the BANK OF WOODLAND, a Corporation, J. CRAIG, KATE S. CRAIG, J. L. STEPHENS, L. D. STEPHENS, J. J. STEPHENS, P. N. ASHLEY and N. A. HAWKINS, the parties of the second part,

WITNESSETH:

That the party of the first part agrees to buy, and the parties of the second part agree to sell all of the Capital Stock of the Yolo County Consolidated Water Company owned by the parties of the second part and being in the aggregate more than seventy-five per cent of the whole of said capital stock; the number of shares owned by each of the parties of the second part being set down opposite the signatures of the parties hereto.

And the price therefor shall be the sum of Forty-five dollars per share, payable as follows, to wit: the sum of fifty-one thousand, two hundred and fifty dollars already paid thereon, receipt of which is hereby acknowledged and the balance in the manner and time as follows, to wit: The sum of Forty Thousand Dollars to be paid in the stock of the Central Counties Land Company, a corporation, taken at seventy-five per cent of its face or par value, to be issued and delivered upon the signing of this agreement and with the guarantees accompanying said stock; and the balance in cash and bonds as follows, to wit: the sum of three dollars and thirty-three cents

per share in gold coin on the 15th day of January, 1908, and the sum of three dollars and thirty-three cents per share in gold coin on the 15th day of July, 1908, and the sum of three dollars and thirty-four cents per share in gold coin on the 15th day of January, 1909, and the balance in the bonds of Central California Power Company, a California corporation, taken at ninety per cent of their par value, said bonds to [9] be issued, deposited and delivered as hereinafter stated. The amount of said bonds will be two hundred fifty-eight thousand seven hundred and fifty ($258,750) Dollars, provided the whole amount of the capital stock of the Yolo County Consolidated Water Company is sold and delivered under the terms of this agreement and proportionately less if less than the whole of said capital stock be so sold and delivered.

It is agreed and understood that any of said stock not in escrow with California Safe Deposit and Trust Company, a California corporation, and held by the parties of the second part shall be properly endorsed and placed with the said California Safe Deposit and Trust Company, and all the stock of the Yolo County Consolidated Water Company hereby, sold and so placed in escrow shall remain in escrow with the banking department of said California Safe Deposit and Trust Company, and be delivered according to the terms of this agreement.

It is further agreed and understood that the bonds of said Central California Power Company herein described as a part of the consideration of said sale, shall also be placed in escrow with said California

Safe Deposit and Trust Company, as soon as the same shall be issued, to be held and delivered according to the terms of this agreement.

It is understood that the party of the first part will purchase and pay for all other capital stock of the Yolo County Consolidated Water Company which may be offered to him by the other stockholders thereof upon the same terms and at the same price at which the stock of the parties of the second part is by this agreement sold to the party of the first part.

It is further understood and agreed that all the lands and property purchased from the Spring Valley Water Works and its associate companies and other lands owned by the Yolo County Consolidated Water Company bordering on Clear Lake [10] and Cache Creek in Lake County shall be transferred to the Central Counties Land Company, reserving to the Yolo County Consolidated Water Company the right to overflow all that portion of said lands lying below a lake level of seven feet and four inches above the Government low-water mark of said lake, such conveyance to be delivered at the time the stock of said Central Counties Land Company is issued and delivered under the terms hereof.

The stock of the Yolo County Consolidated Water Company and the bonds of the Central California Power Company to be issued and placed in escrow under the terms of this agreement shall remain with California Safe Deposit and Trust Company until all cash payments herein provided to be paid are fully made and until the parties of the second part

have been furnished with a copy of the proceedings of Central California Power Company, certified by its Secretary to be correct, showing that the bonds of said company, and until said bonds shall have a market value of ninety per cent of their par value; whereupon the said California Safe Deposit & Trust Company shall deliver the stock of the Yolo County Consolidated Water Company to the party of the first part and the said bonds to the parties of the second part; provided, however, that at any time after said bonds have been issued and placed in escrow any one or number or all of the parties of the second part at his or their option shall be entitled to receive his or their proportion of said bonds, together with the additional bonds at the price herein named for his part of any cash payments remaining unpaid, upon his delivering, or causing to be delivered, his or their said stock to the party of the first part.

It is further understood and agreed that any and all [11] moneys which may be expended by Yolo County Consolidated Water Company, with the consent of the party of the first part, for permanent betterments or improvements or for the acquisition of any additional property required for the water system and storage of water, pending this agreement, shall be repaid to said Company by the party of the first part with interest thereon at the rate of five per cent per annum. The party of the first part may pay all persons from whom contracts or options are held by the corporation, or may procure extensions of the options to such time as will protect the

rights of said corporation to the same extent that they are now protected and with the same latitude of time now held by said corporation; all such payments and extensions shall be made in the name of and for the use of the Yolo County Consolidated Water Company, excepting as hereinafter provided.

The party of the first part further agrees and covenants that he will procure at his own expense from the Yolo County Consolidated Water Company a grant of permanent water rights upon and for seven thousand acres of land belonging to the parties of the second part, it being expressly provided that the water to be used under said water rights is to be supplied and paid for on the same terms and conditions that water is sold to other persons from the ditches of said corporation.

The parties of the second part hereby undertake and agree that the shares of the capital stock so placed in escrow and sold to the party of the first part shall not be subject to any indebtedness of the said Yolo County Consolidated Water Company, or to any lien or liability and that the said Yolo County Consolidated Water Company shall not be indebted in any sum whatever when said stock shall be finally delivered as herein provided for, excepting only the bonded debt of $225,000, of said corporation now outstanding which together with the interest hereafter to become due thereon shall [12] remain a liability of said Yolo County Consolidated Water Company.

It is further understood and agreed that the Yolo County Consolidated Water Company is entitled to

receive rights of way across all property now owned by the stockholders of said corporation, who are parties to this agreement, or by the Bank of Woodland or any other corporation or company controlled by the stockholders of said Yolo County Consolidated Water Company; said rights of way to cover rights for ditches, flumes, dams, power lines, pole lines and rights to flood land bordering on the shores of Clear Lake and any other purpose which the party of the first part and his associates may require to use in connection with the business of supplying water for irrigation and domestic purposes and the development and transmission of power.

Said parties of the second part, in consideration of the execution of this agreement by the party of the first part, hereby grant unto said YOLO COUNTY CONSOLIDATED WATER COMPANY, and to its successors or assigns, forever, rights of way over all of their, or any of their lands for such ditches, flumes, dams, power lines, pole lines, and for such other purposes and uses as may be necessary or useful to said Yolo County Consolidated Water Company in the discharge of its corporate functions and the development of its business of supplying water for irrigating and domestic purposes and the development and transmission of power; and said parties of the second part also grant unto Yolo County Consolidated Water Company, and to its successors and assigns forever, the right to overflow all of their or any of their lands bordering on Clear Lake to the extent caused by raising the level of Clear Lake a perpendicular distance of seven (7) feet four (4)

inches above the low water mark established by the United States Government; and said parties of the second part covenant and agree that they and each of them will, for the [13] purpose of fully carrying into effect the grants made by the terms of this agreement, make, execute and deliver to said Yolo County Consolidated Water Company, such other or further assurances as the said party of the first part may be advised by persons learned in the law are necessary to fully vest in said Yolo County Consolidated Water Company the rights herein granted.

It is further understood and agreed that should the party of the first part fail to make any of the additional payments of principal or interest herein provided, at the time the same becomes due, or fail to perform his part of this agreement, then in that event the undersigned party of the first part shall lose all rights to purchase said property and all moneys paid thereon shall be retained as a consideration for the execution of this agreement and the party of the first part shall have no right to recover any portion of said payments; and said parties of the second part in that event shall have, and are hereby granted the right to purchase for the sum of three hundred and fifty thousand dollars the right to overflow all the lands bordering on Clear Lake to the extent caused by the raising of the level of Clear Lake a perpendicular distance of seven (7) feet four (4) inches above the low-water mark established by the United States, whether said right shall be in the name of the party of the first part, or any other associated persons, corporation or company; and, in

said event of such failure, said parties of the second part shall have and are hereby granted the right to purchase at their reasonable market value any land needed for the purpose of erecting dams or other works necessary to raise the level of Clear Lake a perpendicular distance of seven (7) feet four (4) inches above the low-water mark established by the United States.

It is understood and *agree* that the said Yolo County Consolidated Water Company owns the ditches, dams, flumes, rights [14] of way and the property now being used by it and in the event that legal title to any of said property is not vested in said corporation that the same shall be transferred to said corporation within one year from the date hereof.

It is further understood and *agree* that the Yolo County Consolidated Water Company shall be entitled to receive and shall receive from the stockholders of said corporation and from any corporation controlled by said stockholders all riparian rights for lands bordering on Cache Creek except the right to take water from said Cache Creek for livestock and domestic*e* purposes.

It is further understood and agreed that the party of the first part will pay interest on all the outstanding bonds of the Yolo County Consolidated Water Company as the same shall hereafter become due and that all deferred payments on the purchase price of said stock of the Yolo County Consolidated Water Company hereby purchased shall bear interest at the rate of five per cent per annum payable semi-annually from date hereof until paid; the payment

of the amount to be paid in bonds of Central California Power Company to be reckoned or computed as made at the date of the acceptance of said bonds and their delivery to the parties of the second part; and all net income of the Yolo County Consolidated Water Company arising from irrigation or otherwise shall be applied as a credit on said interest.

IN WITNESS WHEREOF said parties have executed this agreement the day and year first above written.

(Signed) E. P. VANDERCOOK,
CAPAY DITCH COMPANY—8789 shares. [15]
By J. CRAIG,
President.
And L. D. STEPHENS,
Secretary.
STEPHENS AGRICULTURAL AND LIVE STOCK COMPANY—400 shares.
By J. L. STEPHENS,
President.
And NANNIE STEPHENS,
Tem. Secretary.
BANK OF WOODLAND—400 shares.
By L. D. STEPHENS,
President.
And J. CRAIG,
Secretary.
J. L. STEPHENS.
N. A. HAWKINS—135 shares.
J. J. STEPHENS.
L. D. STEPHENS—18 shares.
P. N. ASHLEY—100 shares.
KATE S. CRAIG. [16]

That the said Vandercook, at the time of making and entering into the said agreement hereinabove set forth, and thenceforward, was acting in co-operation with the aforesaid corporations Central Counties Land Company, California Industrial Company, and Central California Power Company. That pursuant to the said agreement the said Vandercook, on the 19th day of January, 1907, paid to the parties of the second part thereto the sum of $91,250.00, $51,250.00 of which said sum was paid in cash, and $40,000.00 of which said sum was paid and discharged by delivery to the said parties of the second part to said agreement of 533 shares of the capital stock of the said Central Counties Land Company, a corporation, which said shares of stock the said parties of the second part to said agreement accepted at the rate of $75.00 per share, and the sum of $25.00 in cash, which said stock and cash the said parties did then and there purchase and receive of and from said E. P. Vandercook in lieu of, and as a substitute for, cash in the sum of $40,000.00; and the said E. P. Vandercook duly delivered to the California Safe Deposit and Trust Company, a corporation, of San Francisco, California, bonds of said corporation Central California Power Company in the amount of $258,750.00, in the form and manner provided for in the said agreement, and the said parties of the second part to the said agreement, on the 31st day of January, 1907, pursuant to the said agreement, duly deposited with said California Safe Deposit and Trust Company certificates representing 9,424 shares of the capital stock of the Yolo County Consolidated

Water Company, and at divers times thereafter deposited with said California Safe Deposit and Trust Company, pursuant to said agreement, certificates representing 440 additional shares of the capital stock of said Yolo County Consolidated Water Company, making a total of 9,864 shares of [17] said stock so deposited in escrow with said California Safe Deposit and Trust Company.

That thereafter, and pursuant to the said agreement, the said E. P. Vandercook, on the 29th day of March, 1907, paid to the said parties of the second part to said agreement, on account of interest due on bonds of the said Yolo County Consolidated Water Company, the sum of $2,094.37.

That thereafter, and pursuant to the said agreement, the said E. P. Vandercook, on the 22d day of July, 1907, paid to the said parties of the second part to said agreement the sum of $8,320.75, said amount being the amount of interest then due on the purchase price of said stock, at the rate of five per cent per annum, pursuant to the terms of said agreement.

That thereafter, on the 18th day of November, 1907, the said E. P. Vandercook paid to the said parties of the second part to the said agreement the sum of $19,570.75, being all interest then due on bonds and on the purchase price of said stock, and all interest to become due under said agreement to and including April 1, 1908.

That, as was contemplated and provided for in said agreement, the defendant Yolo County Consolidated Water Company, therein referred to, paid out and expended for the acquisition of additional prop-

erty for a water system and for the storage of water the sum of $86,060.50, such payment being made at divers times, as follows:

On or about the 19th day of January, 1907, the sum of $48,955.25.

On or about the 31st day of January, 1907, the sum of $325.00.

On or about the 31st day of January, 1907, the sum of $3,132.50. [18]

On or about the 31st day of January, 1907, the sum of $33,330.00.

On or about the 26th day of February, 1907, the sum of $292.75.

On or about the 26th day of October, 1907, the sum of $25.00.

That all of the said sums, together with interest due thereon, were, pursuant to the terms of the said agreement, and at the special instance and request of the parties of the second part to said agreement, repaid and returned to the defendant Yolo County Consolidated Water Company by the said Vandercook on the days and dates, and in the amounts hereinabove set forth.

That the parties of the second part to said agreement of January 19, 1907, for a good and valuable consideration, covenanted and agreed with said E. P. Vandercook to waive, and did waive, any and all rights conferred upon them or any or either of them, in and by that certain paragraph of said agreement wherein it was stipulated that "should the party of the first part (said Vandercook) fail to make any of the additional payments of principal or interest

herein provided, at the time the same became due, or fail to perform his part of this agreement, then in that event the undersigned party of the first part shall lose all rights to purchase said property and all moneys paid thereon shall be retained as a consideration for the execution of this agreement, and the party of the first part shall have no right to recover any portion of such payment."

XIV.

That the authorized issue of the capital stock of the defendant Yolo County Consolidated Water Company was ten thousand (10,000) shares, and that less than the whole amount of said **[19]** capital stock of said corporation, to wit, 9,864 shares, was sold and delivered in escrow as aforesaid.

XV.

That the said 533 shares of the capital stock of the said Central Counties Land Company was, under the terms of the said agreement hereinabove set forth, thereafter issued and delivered to the parties of the second part to said agreement, and that contemporaneously with such delivery the parties of the second part to said agreement made and executed an instrument intended, purporting, and supposed by said Vandercook and by said Central Counties Land Company to convey unto said Central Counties Land Company all of the lands and property referred to in said agreement as having been purchased from the Spring Valley Water Company and its associate companies, and also other lands owned by the defendant Yolo County Consolidated Water Company bordering on said Clear Lake and Cache Creek in

Lake County, California, but that in fact the description contained in said instrument of conveyance did not cover and include, and was well known to said parties of the second part to said agreement of January 19th, 1907, not to describe or include all the property so purchased from said Spring Valley Water Company and its associate companies as provided for in said agreement, but that property of a very great value so purchased as aforesaid from said Spring Valley Water Company and its associate companies was not described in or conveyed by said deed.

That it was the true intent and meaning of the aforesaid agreement of January 19th, 1907, that said Spring Valley property so to be conveyed pursuant to the terms thereof should be conveyed to said Central Counties Land Company free and clear of and from any and all liens and encumbrances, and in the same condition as to its title that the same was in when it was purchased from said Spring Valley Water Company, and its allied and associate companies, but in truth and in fact, when the said [20] lands were so attempted to be conveyed and were, in fact, partly conveyed as aforesaid to said Central Counties Land Company, the same had, subsequent to the date of the conveyance by the Spring Valley Water Company, and its allied and associate companies, to the parties of the second part to said agreement and prior to the conveyance, or attempted conveyance, thereof to said Central Counties Land Company, become encumbered by a deed of trust or mortgage given to secure a bonded indebtedness of two hundred twenty-five thousand ($225,000.00) dol-

lars, and that the lien thereof has never been at any time removed.

That the legal title to the ditches, dams, flumes, rights of way, and property above referred to was not, at the date of said agreement, vested in said defendant Yolo County Consolidated Water Company, and that the same was not transferred to said corporation within one year from the date of said agreement as provided in said agreement.

That the defendant Yolo County Consolidated Water Company did not receive from the stockholders of said corporation, and from the various corporations controlled by said stockholders, as provided for in said agreement all riparian rights (except the right to take water for live stock or domestic purposes, for lands bordering on Cache Creek), or any riparian rights whatever.

That the said E. P. Vandercook did not make to the parties of the second part to said agreement the additional payment of $3.33 per share due on the 15th day of January, 1908, as called for by said agreement, nor did he make the additional payment of $3.33 per share due on the 15th day of July, 1908, as called for by said agreement, nor did he make the additional payment of $3.33 per share due on the 15th day of January, 1909, as called for by said agreement, but, by the agreement of all of the parties to said agreement, the provision therein as to the times for making the said payments was waived, and the time for the [21] making thereof was duly and regularly extended and continued, from time to time, and the time for making the said payments was

open on the 24th day of March, 1912, when the said agreement was canceled and rescinded as hereinafter set forth.

XVI.

That on the 3d day of March, 1908, the defendants Joseph Craig and Capay Ditch Company were owners and holders of the capital stock of said Central Counties Land Company, and on said day, said defendants entered into a certain agreement for a merger of all of the interests of the above-named Vandercook under the aforesaid agreement, and all of the capital stock of the said Central Counties Land Company, the California Industrial Company, and the Central California Power Company, which said merger agreement (by which title the same is hereinafter referred to) was duly signed by the said Vandercook and by the defendants Joseph Craig and Capay Ditch Company, and by each and all of the other then stockholders of the said three corporations last above named, and which said merger agreement was and is in the words and figures following, to wit: [22]

[Agreement, March 3, 1908, Between Shareholders of Central Counties Land Co. et al. and E. P. Vandercook.]

THIS AGREEMENT made and entered into this THIRD day of March, 1908, between the undersigned, shareholders of the CENTRAL COUNTIES LAND COMPANY, the CENTRAL CALIFORNIA POWER COMPANY, the CALIFORNIA INDUSTRIAL COMPANY, and E. P. VANDERCOOK,

WITNESSETH:

THAT WHEREAS the said undersigned stockholders are the owners respectively of the number of shares in the said respective corporations set opposite their signatures hereto and being all of the issued capital stock of said corporations.

AND WHEREAS the said Vandercook is the owner of an option to purchase all of the issued capital stock of the Yolo County Consolidated Water Company; and is the owner of all of the issued capital stock of the California Industrial Company;

AND WHEREAS the Clear Lake Power and Irrigation Company is desirous of acquiring the stock of said corporations and the said option;

NOW THEREFORE IT IS AGREED AS FOLLOWS:

(1.) That all of the caiptal stock in the said corporations held by the signers of this agreement and being all of the issued stock of said corporations and the said option shall be transferred, assigned, set over, and exchanged to and with the said Clear Lake Power and Irrigation Company, in consideration of the issuance, as hereinafter provided for, of 49,999 shares of the capital stock of the said Clear Lake Power and Irrigation Company.

(2.) It is further agreed, that the said Vandercook shall receive 16,777 shares out of said 49,999 shares of the capital stock of the said Clear Lake Power and Irrigation Company, for and in consideration of One thousand shares of the capital stock of the Central Counties Land Company, represented by Certificate Numbers 41 and 102, and for and in

consideration of all of the issued stock of the California Industrial Company, [23] and for and in consideration of 7,867 shares of the capital stock of the Central California Power Company (which said option and stock shall be turned over, as aforesaid, to the said Clear Lake Power and Irrigation Company).

The remaining 33,222 shares of the said 49,999 shares of the capital stock of the said Clear Lake Power and Irrigation Company shall be distributed among the parties hereto in proportion to the respective amounts actually contributed by them or their assignors or predecessors in interest to the assets or maintenance of said corporations, that is to say, for each $100 of value actually paid in or contributed, in money or land, by the parties hereto or by their assignors or predecessors in interest (exclusive of services rendered) to the assets or maintenances of said corporations or either of them there shall be transferred and delivered to such party nine and one-half shares of the capital stock of the said Clear Lake Power and Irrigation Company. The amount so paid or contributed in money or land by the parties hereto or by the assignors or predecessors in interest is set forth opposite their respective names and is hereby accepted by each of the signers hereto as a correct statement of the amount so paid or contributed.

IT IS AGREED that no fractions of shares of stock of the Clear Lake Power and Irrigation Company be issued but that the number of whole shares nearest the fractional number shall be issued.

IN WITNESS WHEREOF, the said parties have hereunto set their hands and seals the day and year first above written. [24]

STOCKHOLDERS IN THE CENTRAL COUNTIES LAND COMPANY.

Signature of Stockholders.	Share Held.	Amt. Paid.	Shares in Clear Lake Power and Irrigation Co.
Geo. D. Gray	200	$15,200.00	1444
Home Realty Co.	24	1,824.00	173
Anson S. Blake	50	3,800.00	361
E. P. Vandercook	637	41,733.00	3965
E. P. Vandercook	1000	Inc. above per agreement	
E. P. Vandercook	25	1,875.00	178
E. P. Vandercook, Trustee			
J. S. Herman, Trustee	230	7,500.00	713
Edward O. Allen	1	1.00	none
Ramon Roca	500	38,000.00	3610
Oscar Sutro	6	375.00	36
Jose Costa	5	375.00	36
Newman Kline	50	5,000.00	475
Jno. L. Clem Jr.	15	1,140.00	107
Hiram W. Johnson	472	19,972.00	1897
Edward O. Allen, Trustee	771	50,771.00	4823
A. F. Cornwall	10	760.00	72
Capay Ditch Co. By J. Craig, Pres. By L. D. Stephens, Sec.	633	48,133.00	4572
James Conning	30	2,250.00	213
A. S. d'Avila	390	7,150.00	679
Emily R. Newton	580	30,580.00	2905
D. N. Duffy	100	7,600.00	722
W. D. Huntington	36	2,700.00	256

CALIFORNIA INDUSTRIAL COMPANY.

E. P. Vandercook. All issued stock.

YOLO COUNTY CONSOLIDATED WATER COMPANY.

E. P. Vandercook $61,250.00 5819

STOCKHOLDERS IN THE CENTRAL CALIFORNIA POWER COMPANY.

Geo. D. Gray	200	nothing	none
Home Realty Co.	24	"	"
Anson S. Blake	50	"	"
E. P. Vandercook	7867	per agreement	
Edward O. Allen	1	nothing	none
Ramon Roca	500	"	"

Issue for these holdings is covered by issue for holdings in Central Counties Land Co.

Signed by all other stockholders. [25]

That the document referred to in the above and foregoing merger agreement as "an option to purchase," is the agreement of purchase and sale, dated the 19th day of January, 1907, and first hereinabove set forth.

That the Clear Lake Power and Irrigation Company referred to in the agreement for merger last hereinabove set forth, was a corporation duly organized under the laws of the State of California, having an authorized capital of ten million dollars, divided into one hundred thousand shares of the par value of one hundred dollars each.

That after the execution of the above and foregoing merger agreement, the Board of Directors of the said Clear Lake Power and Irrigation Company, at a meeting duly and regularly called and assembled, duly passed and adopted a resolution in words and figures following, to wit: [26]

[Resolution of Board of Directors of Clear Lake Power and Irrigation Co.]

"RESOLVED THAT WHEREAS a certain agreement dated the 3d day of March, 1908, has been made and entered into by and between certain stockholders of the Central Counties Land Company, the Central California Power Company, the California Industrial Company, and E. P. Vandercook.

AND WHEREAS in and by the aforesaid agreement it is provided that the owners of the issued stock in the said corporations and the owner of certain rights and options shall transfer and convey the same over to this corporation in consideration of the

issuance of 49,999 shares of the capital stock of this corporation;

AND WHEREAS in the opinion of this Board of Directors it is to the best interest of this corporation to issue the said stock for the said consideration, and thereby unite the interests in certain lands about Clear Lake and certain water rights and power privileges and certain irrigation interests;

NOW, THEREFORE, BE IT RESOLVED that this corporation will, so soon as the said stock of the said corporations and the said rights referred to in said agreement shall be ready to be passed over to this corporation, issue 49,999 shares of its capital stock for and in consideration thereof; and the President and Secretary of this corporation are hereby authorized, empowered and directed, for and in the name of this corporation, and as and for its corporate act, to carry this resolution into effect and to issue in an appropriate manner for that purpose, 49,999 shares of the capital stock of this corporation and to deliver the same to the respective parties entitled thereto, upon receiving the subscribed capital stock of the Central Counties Land Company, the Central California Power Company, and the California Industrial Company, and other rights and property referred to in the aforesaid agreement between the stockholders of the said corporations and the said E. P. Vandercook, dated the 3d day of March, 1908." [27]

That thereafter the said Clear Lake Power and Irrigation Company made out certificates of its shares of stock to the number and in the manner

called for by said agreement, and at all times thenceforward held the same in readiness for delivery, upon receiving all of the shares of the capital stock referred to in the merger agreement last hereinabove set forth.

That the defendants Joseph Craig and Capay Ditch Company were the owners, upon the books of the said Central Counties Land Company, of 634 shares of its capital stock, but that the said Craig and the said Capay Ditch Company, although parties to the aforesaid merger agreement, failed, refused and neglected, and at all times thenceforward failed, refused and neglected so to turn in their said stock to the said Clear Lake Power and Irrigation Company.

That the said Clear Lake Power and Irrigation Company was unwilling to issue any of its capital stock unless each and all of the signers of the agreement of merger last hereinabove set forth should unite in turning in and turn in all of the said stock. That, nevertheless, by the mutual consent and acquiescence of all of the parties to the aforesaid agreement, and of all of the stockholders of said corporations, the said merger in said merger agreement provided for was treated as an accomplished fact, and the said parties to the said merger agreement proceeded to transact business connected with the said enterprise in the name of the said Clear Lake Power and Irrigation Company.

That the principal part of the costs and expenses of conducting such business was, however, borne by said Central Counties Land Company.

That in the month of June, 1911, the said enter-

prise was in the condition which has been hereinabove described.

That the assets owned by the said Central Counties Land [28] Company, California Industrial Company, and Central California Power Company the ownership of the stock of which said corporations was to be merged as aforesaid, were of very great potential value, but that a considerable part thereof was in the form of agreements, and a considerable part thereof was subject to mortgage, and that the said properties did not have an immediate or market value equal to the liabilities of the said corporations, although the potential value thereof was far in excess of such liabilities, and that the said assets, aided and assisted by the capital necessary to pay off encumbrances, and to handle and utilize the same, would not only have been sufficient to have paid off all of the outstanding liabilities of all of the said corporations, but would have left a surplus of at least $1,500,000.00 over and above said liabilities, but that at said time the financial situation of the said corporations was such that unless within one year from the first day of June, 1911, such capital could be interested and obtained, said enterprise would wholly fail, and the creditors of the said corporations would receive but a small percentage, if anything, on account of their claims, and that there would be absolutely no surplus for the stockholders.

That one of the chief assets in the said enterprise affording, in connection with others of the assets, the principal inducement for capital to enter upon and

interest itself in the said enterprise was the aforesaid agreement of January 19th, 1907, between the said Vandercook and the said defendants Joseph Craig and Capay Ditch Company, and other persons, a copy of which said agreement is first hrereinabove set forth.

That the condition of the said enterprise, and the relation of the said Vandercook agreement of January 19th, thereto was well known to all the stockholders and officers of the said Central Counties Land Company. [29]

That the defendant Joseph Craig was not only a stockholder in the said Central Counties Land Company, as aforesaid, but was, on the said first day of June, 1911, and ever since the 23d day of December, 1907, had been, and thenceforward at all times continued to be, an officer or trustee of the said Central Counties Land Company, and was also the President of the defendant Yolo County Consolidated Water Company, and was also the President of the defendant Capay Ditch Company.

XVII.

That on or about the first day of June, 1911, the Board of Directors of the said Central Counties Land Company, realizing the aforesaid financial condition of the said Central Counties Land Company, and that in order to prevent the total failure of the said merger and the financial ruin of said three corporations whose stock was covered by said merger agreement, it would be necessary to secure additional capital, employed and sent to New York one J. W. Northup, and directed the said Northup to take up

the matter of interesting capital in the said enterprise with New York financiers. That the said Northup was furnished with maps and engineering reports, statements and report of counsel, including a printed report of one W. A. Cattell, an engineer, a copy of which printed report is hereunto annexed, marked Exhibit "A" and made a part hereof.

XVIII.

That the said Northup went to New York and laid the said matter before the defendant William A. Brady, a man of large affairs, who was then, and ever since has continued to be, in close touch with the defendant E. L. Phillips and the defendants White and Company, Archibald S. White and C. L. Parmalee. That said defendant E. L. Phillips was at said time, and ever since has been and still is, an engineer in the employ of the defendant [30] White and Company, and a participant in any profits derived by said defendant White and Company from the business enterprises in which he rendered or renders them services.

That the said Northup, through the said defendant William A. Brady, aroused the interest of the said defendants E. L. Phillips, William A. Brady, Archibald S. White, C. L. Parmalee and White and Company in the said enterprise, and laid the said maps and reports before the said defendants William A. Brady and E. L. Phillips, which said maps and reports, as plaintiff is informed and believes, and upon such information and belief alleges, were in turn placed before the said defendants Archibald S. White, C. L. Parmalee, Roy M. Pike, and White and Company.

That in the month of August, 1911, in further pursuance of said enterprise, the said Central Counties Land Company, acting in aid and furtherance of interesting capital in said enterprise, caused one Ottomar H. Van Norden, a broker of the City of New York, to further present and press the said enterprise upon the attention of the said defendants William A. Brady, E. L, Phillips, Archibald S. White, C. L. Parmalee and White and Company.

That by the 15th day of October, 1911, the said parties had all become thoroughly interested in the possibilities of the said enterprise, and the defendant E. L. Phillips, with the knowledge, consent and approval of the defendants William A. Brady, Archibald S. White, C. L. Parmalee, and White and Company, advised the said Central Counties Land Company that he was prepared to leave New York on the 28th day of October, 1911, and inspect the property in the State of California embraced in said enterprise, and that he, the said defendant E. L. Phillips, and that the said defendants William A. Brady, Archibald S. [31] White, C. L. Parmalee, and White and Company had arranged for the necessary money to carry through the deal.

That on the following day the said defendant E. L. Phillips advised said Central Counties Land Company that he and the said defendants William A. Brady, Archibald S. White, C. L. Parmalee, and White and Company had considered the proposition carefully and had decided to go into it.

That on the 19th day of October, 1911, the said defendant E. L. Phillips addressed and mailed to

Rudolph W. Van Norden, then and ever since a member of the Board of Directors and a trustee of said Central Counties Land Company, and a brother of the above-named Ottomar H. Van Norden, a letter in the words and figures following, to wit: [32]

[Letter of E. L. Phillips to Rudolph W. Van Norden.]

There has been submitted to me this morning by your brother, "A suggested offer" covering the Clear Lake proposition. I have gone over this offer very carefully with your brother, and while there are many points in it that are rather severe as it stands, yet when we come to get together personally, these can be thoroughly explained, and various clauses put in the agreement to mutually protect our interests.

I wish to have you feel that we have considered this proposition carefully and have decided to go into it if our moves are properly protected.

We want to deal fairly with you people and have you feel the same toward us. We believe that if the proposition has the merit which you have indicated that there will be profit in it for all concerned.

The funds necessary to carry out this deal are all arranged, but you must remember that this is not simply a loan that we are considering, but the investment of a large sum of money to carry out the proposition completely.

The banking houses are prepared to buy the bonds and furnish the money as fast as the earnings are sufficient to warrant such a deal, inasmuch as you know the certainty of these earnings, provided the

funds are furnished for the construction. This seems to me to be a plain sailing proposition.

You will readily understand that I am leaving New York at a considerable sacrifice to our business here, as we have a number of operations going on at the present time that urgently demand my personal attention. I wish, therefore, that you would be frank and wire me, or your brother, before the 28th inst. that the proposition will be held intact and ready for us to carry out our plans, provided I come to San Francisco. In no event will I leave New York unless I am absolutely certain that the deal can be carried through.

Yours very truly,

(Signed) E. L. PHILLIPS.

ELP/DH. **[33]**

That the said communications were submitted to the defendant Joseph Craig, and he fully understood the contents thereof. That at the stage of the proceedings just described, the said defendant Joseph Craig, in violation of his fiduciary relations to the said Central Counties Land Company, which he bore thereto as a member of its Board of Directors, conceived a fraudulent scheme to secretly negotiate with the said defendants William A. Brady, E. L. Phillips, Archibald White, and C. L. Parmalee, and with the said defendant White & Company, and to bargain with them to bring about the rescission and cancellation of the aforesaid contract dated January 19th, 1907, made with the said Vandercook, and to wreck and destroy the aforesaid merger, and to wreck and destroy said Central Counties Land Com-

pany, to the end that the said defendant Craig might receive a larger sum of money upon the stock owned by him in the said defendant corporation Yolo County Consolidated Water Company than was provided for in the said agreement with the said Vandercook, dated January 19th, 1907, and that he might also secretly receive a large commission in money, stocks, and bonds on the transaction. That to that end the said defendant Craig secretly sent an agent to New York who, unbeknown at the time to the Central Counties Land Company, opened negotiations with the said defendants Brady, Phillips, White and Parmalee, and with the said defendant White & Company, and, through the said agent, and by means of letters and telegrams, the said defendant Craig entered into a combination and conspiracy with the said defendants Brady, Phillips, White and Parmalee, and with the said defendant White & Company, to wreck the aforesaid merger and to bring about the cancellation and rescission of the aforesaid contract with the said Vandercook, dated January 19th, 1907, and to wreck, ruin and destroy the said Central Counties **[34]** Land Company, and to acquire the said enterprise for themselves at a relatively small cost, provided said defendant White and Company should be satisfied, after a personal inspection of the properties by defendant Phillips, of the practicability and value of the aforesaid enterprise.

That at all said times said defendants Brady, White, Phillips, Parmalee, and White and Company well knew of the fiduciary relations in which the

said defendant Craig stood towards said Central Counties Land Company, and had in their possession and were familiar with the contents of the aforesaid report Exhibit "A," and had in their possession full schedules of the lands then owned and claimed by said Central Counties Land Company, full statements of its assets and liabilities, and an elaborate and complete map of the said Clear Lake and of the lands owned and claimed by said Central Counties Land Company, and its aforesaid allied corporations, on said Clear Lake, including the land known as the Spring Valley ranch, all of which said maps, reports, schedules, and information had been laid before the said defendants Brady, Phillips, White, Parmalee and White and Company through the agency of said J. W. Northup and said Ottomar H. Van Norden.

That thereupon, and in pursuance of said fraudulent scheme and conspiracy, the defendant E. L. Phillips came to the State of California with the said agent of the said defendant Joseph Craig, arriving in said State of California on or about the 3d day of December, 1911, and thereupon the said defendant Craig and his said agent, and the said defendant Phillips, went to said Clear Lake and spent several days there together in looking over the aforesaid enterprise.

That said defendant Phillips became and was convinced, from said personal examination and inspection, that said **[35]** enterprise was practicable and of great value. That, as a part and parcel of the aforesaid fraudulent scheme and conspiracy, it

was agreed between the said defendants Craig and Phillips, with the full knowledge and consent of the said defendants Brady, White, Parmalee, and White and Company, that the said defendant Craig should cause a corporation to be organized as an agency or instrumentality for the purpose of carrying out the aforesaid fraudulent scheme and conspiracy, and with the full knowledge and consent of the said last named defendants, that the said defendant Craig would bring it about that, notwithstanding the existence of the aforesaid contract with the said Vandercook, dated January 19th, 1907 and notwithstanding the fact that the said contract was in full force and effect, an agreement should be made over to said proposed corporation, wherein and whereby all of the parties of the second part to the said Vandercook agreement of January 19th, 1907, should purport to agree to sell to the said defendant Craig and his assigns all of the aforesaid stock covered by the said Vandercook agreement of January 19th, 1907, and that said defendant Craig should assign, or cause to be assigned, the said agreement to such proposed corporation. And said defendant Craig further then and there agreed with his said co-conspirators to bring it about that said parties of the second part to said Vandercook agreement would bring about a cancellation and rescission of the said Vandercook agreement, upon and after the accomplishment of which they would turn over and deliver all of the said stock of the defendant Yolo County Consolidated Water Company to the said corporation so proposed to be organized, and that

the said proposed corporation should immediately thereupon institute condemnation proceedings to cover all of the lands which each and all of the said defendants well knew the said [36] Central Counties Land Company deemed essential to said enterprise, and which the said Clear Lake Power and Irrigation Company, and all the parties to the aforesaid merger agreement, desired and intended to cause to be acquired as a part and parcel of the aforesaid enterprise. That it was intended by said conspirators that, as a result of such rescission of said Vandercook agreement, it would be impossible to finance the said enterprise and that the stockholders of the said Central Counties Land Company would become discouraged and would decline to advance more moneys to the said enterprise, and that the parties to the said merger agreement would all fail, refuse and neglect to go ahead and proceed therewith; that the aforesaid enterprise would be wrecked, and that they, the said conspirators, would be able thereupon to take up and acquire all of the valuable properties and rights of said Central Counties Land Company, and of said California Industrial Company, and of said Central California Power Company, at a cost to them of little or nothing.

That pursuant to the said fraudulent scheme and conspiracy, and in furtherance thereof, said defendant Craig and his said co-conspirators caused the defendant Yolo Water and Power Company to be incorporated on the 11th day of December, 1911, under the laws of the State of California, with an au-

thorized capital stock of ten million dollars, divided into one million dollars of preferred stock and nine million dollars of common stock; that the incorporators of said defendant Yolo Water and Power Company were each and all dummies and agents employed for the purpose of effecting said incorporation by said defendant Craig and his said co-conspirators; that the said defendant Craig proceeded to and did procure the agreement concerning said stock which he had planned with his said co-conspirators to [37] procure as aforesaid. That immediately upon the organization of the said defendant Yolo Water and Power Company, the said defendant Craig and his aforesaid co-conspirators, defendants herein, caused to be made over to said corporation said agreement for the aforesaid shares of the capital stock of the defendant Yolo County Consolidated Water Company referred to, and agreed to be sold to the said Vandercook, in and by the aforesaid agreement dated January 19th, 1907.

That at or about the same time the said Spring Valley ranch, and the title thereto, were in the following situation: The said Spring Valley ranch is a tract containing one thousand and five (1005) acres, or thereabouts, and is situated near the outlet of the said Clear Lake, and covers in places one side, and in other places both sides, of Cache Creek, the natural outlet of the said lake. Said ranch contains a valuable dam site and includes property upon which it was well known to the said defendant Yolo Water and Power Company, and to each and all of the said conspirators, the said Central Counties

Land Company and the said parties to the said merger agreement intended to erect a dam wherewith to dam up and control the waters of the said Clear Lake. That the fee simple to said land was owned by said Central Counties Land Company, but that on the 18th day of November, 1907, the said land had been mortgaged, as the said defendants and each of them well knew, to the defendant Capay Ditch Company, to secure the payment by said Central Counties Land Company of three several promissory notes, the principal of which aggregated the sum of $24,570.75. That the said mortgage, as each and all of the said defendants well knew, was in the form of a deed absolute, but was nevertheless intended to be and was a mortgage and had been executed pursuant to the authority [38] contained in and conferred upon the President and Secretary of said Central Counties Land Company, by a resolution duly adopted at a regularly called and assembled meeting of the Board of Directors of said Central Counties Land Company, at which said meeting said defendant Joseph Craig was present, and which said resolution so adopted was in the words and figures following, to wit: [39]

[Resolution of Board of Directors of Central Counties Land Co.]

BE IT RESOLVED that this corporation offer and deposit as security for the payment of the notes authorized in the foregoing resolutions, such security to be returned in the event of such payment, the deed of this corporation conveying to the Capay Ditch Company, a California corporation, that cer-

tain property in Lake County, California, conveyed to this corporation by said Capay Ditch Company by deed dated January 24th, 1907, and recorded in Volume 39 of Deeds, at Page 355 and following, Records of Lake County, excepting therefrom the swamp and overflowed lands therein described; and also as such security debenture certificates of this company as authorized August 13th, 1906, of the face value amounting to Five Thousand Dollars ($5,000.00); and

BE IT FURTHER RESOLVED that the President and Secretary of this corporation be and they are hereby authorized and directed to execute under its official seal the grant, bargain and sale deed of this corporation, as aforesaid, and also to execute and issue debenture certificates of this corporation as aforesaid, and to deposit the same as security for the payment of said notes, and to do any acts which they may deem necessary to effectuate the intent of this resolution. **[40]**

That although said co-conspirators well knew that said instrument was a mortgage, nevertheless the said defendant Craig, in further pursuance of said fraudulent scheme and conspiracy, caused and brought it about that said defendant Capay Ditch Company, the said mortgagee, on the 18th day of December, 1911, signed, through him, the President, and one L. D. Stephens, the Secretary, an instrument purporting to be a deed absolute to the defendant Yolo County Consolidated Water Company of said Spring Valley ranch, but kept the said instrument secret and unrecorded until June 17th, 1912.

That said deed purports to have been executed by said Craig as President, and by said Stephens as Secretary, of said defendant Capay Ditch Company, to themselves. That they kept and retained said purported deed during and after the execution thereof and until they handed it to said defendant Yolo Water and Power Company as hereinafter alleged.

That on the same day, and at the same time, said Craig and said Stephens, in the name of said defendant Yolo County Consolidated Water Company, signed an instrument, in form a deed absolute, wherein the said Yolo County Consolidated Water Company purports to convey said Spring Valley Ranch to said defendant Craig and one J. L. Stephens who was and is a relative of said Craig and a party of the second part to said Vandercook agreement. That said J. L. Stephens, at said time and at all times, had actual notice and knowledge that said instrument so executed by said Central Counties Land Company to said defendant Capay Ditch Company was and is a mortgage. That thereupon said defendant Craig and said Stephens, pursuant to and in furtherance of said fraudulent scheme and conspiracy, took said two instruments so signed by said Craig as President to the City of Oakland, California, and there, on the 20th day of December, 1911, handed the same **[41]** to one of their agents and dummy directors in said defendant Yolo Water and Power Company, and did also, in furtherance of and pursuant to said fraudulent scheme and conspiracy, hand to said agent and dummy director an instru-

ment in form a deed absolute purporting to convey the said Spring Valley Ranch from them, the said defendant Craig and Stephens, to the said defendant Yolo Water and Power Company.

That said instrument also was kept secret and was not recorded until June 17th, 1912.

That as plaintiff is informed and believes, and on such information and belief avers, said defendant Yolo Water and Power Company thereupon, and in consideration of said purported conveyance and of said contract to sell said stock, issued or agreed to issue to said defendant Craig and to said Stephens, or to said defendant Craig, certificates purporting to represent a very large amount, if not all, of both its preferred and common stock. That the actual amount so issued can be made known only upon a discovery. But nevertheless, as part and parcel of said scheme and conspiracy, the entire $10,000,000.-00 of said capital stock was, for the consideration aforesaid, treated as issued or subscribed for, and thereupon said conspirators caused said corporation to comply with certain of the forms of law proper to a bond issue of $10,000,000.00, and thereafter a so-called deed of trust, dated January 1, 1912, was acknowledged before a Notary Public on January 9th, 1912, but was also, by direction and at the instance of said conspirators kept secret and not recorded until the 17th day of June, 1912.

That the defendant Yolo Water and Power Company received and accepted the said instruments which were in form absolute deeds as aforesaid, as the agent of said conspirators, with full knowledge

and notice that the said instrument, in form a [42] deed so executed as aforesaid to said defendant Capay Ditch Company by said Central Counties Land Company was, in fact, a mortgage. That the said defendant Yolo Water and Power Company did not receive the same in good faith, for a valuable consideration, and without notice.

That on said 17th day of June, 1912, said so-called deed of trust was recorded in the office of the County Recorder of the County of Lake, State of California, Volume I of Deeds at page 459, Lake County Records.

That at the time of taking the proceedings which purported to authorize the issue of said bonds, ten million dollars ($10,000,000.00) of the capital stock of said defendant Yolo Water and Power Company had not been actually and in good faith subscribed for or issued.

That said so-called deed of trust purports to secure the payment of the said bond issue, and the property purporting to be mortgaged or placed in trust thereby specifically describes the aforesaid Spring Valley Ranch.

That the defendant Oakland Bank of Savings is named as the Trustee in said so-called deed of trust, and parted with no valuable consideration therefor.

That well knowing that the said contract with the said Vandercook, dated January 19th, 1907, was on the 24th day of January, 1912, in full force, operation, and effect, the said defendants, on said day and date, in further pursuance of said fraudulent scheme and conspiracy, caused the parties of the second

part to the said agreement of January 19th, 1907, with the said Vandercook (including the defendants Joseph Craig and Capay Ditch Company), to make, execute, and deliver to the said Vandercook a written instrument in the words and figures following, to wit: [43]

[Notice and Demand.]

"To E. P. Vandercook and to the Central Counties Land Company, a Corporation:

You and each of you will hereby take notice that the undersigned, and each and all thereof, hereby demand of and from you and each of you a full and complete performance of all the terms, conditions and provisions of that certain agreement made and entered into and of date the 19th day of January, 1907, wherein said E. P. Vandercook is named therein as party of the first part, and the Capay Ditch Company, a corporation, the Stephens Agricultural & Livestock Company, a corporation, the Bank of Woodland, a corporation, J. Craig, Kate S. Craig, J. L. Stephens, L. D. Stephens, J. J. Stephens, P. N. Ashley and N. A. Hawkins are named therein as parties of the second part, within the period of sixty (60) days from date hereof, that is to say, on, to wit, on or before the twenty-fourth day of March, 1912, at the Bank of Woodland, in the City of Woodland, County of Yolo, State of California not later than 12 o'clock noon on said last named day.

You and each of you will further take notice that the undersigned and each of them are ready, able and

willing to, and hereby offer to fully perform all the terms, conditions and provisions of said agreement to be by them and each of them kept and performed, and that they have deposited at the said Bank of Woodland in said City of Woodland, County and State aforesaid, good and sufficient grant, bargain and sale deeds duly acknowledged, and by their terms conveying all the land and property in said contract and agreement referred to and by them or any of them to be conveyed, as therein provided, conveying said properties to the parties therein specified; and also three certain promissory notes, in [44] the words and figures following, to wit:

$5625.00 San Francisco, November 18, 1907.

On or before August 1, 1908, Central Counties Land Company, a California Corporation, promises to pay to the Capay Ditch Co., or order, at its office in the City of Woodland, State of California, the sum of Five Thousand Six Hundred and Twenty-five ($5625.00) Dollars with interest commencing April 1, 1908, at the rate of Seven per cent (7%) Per Annum, both principal and interest payable in United States Gold Coin.

(Signed) CENTRAL COUNTIES LAND COMPANY.

By L. S. LACY,
Vice-president.

By EDWARD O. ALLEN,
Secretary.

(Endorsed: E. P. VANDERCOOK,
J. DALZELL BROWN.

Demand, notice of non-payment and protest waived:

E. P. VANDERCOOK,
J. DALZELL BROWN.)

$8320.75 San Francisco, Cal., November 18, 1907.

On or before August 1, 1908, Central Counties Land Company, a California corporation, promises to pay to the Capay Ditch Co., or order at its office in the City of Woodland, State of California, the sum of Eight Thousand Three Hundred and Twenty and 75/100 ($8320.75) Dollars, with interest commencing January 19, 1908, at the rate of Seven Per cent (7%) per annum, both principal and interest payable in United States Gold Coin.

(Signed) CENTRAL COUNTIES LAND COMPANY.
By L. S. LACY,
Vice-president.
EDWARD O. ALLEN,
Secretary.

(Endorsed: E. P. VANDERCOOK,
J. DALZELL BROWN.

Demand, notice of non-payment and protest waived:

E. P. VANDERCOOK,
J. DALZELL BROWN.)

$10,625.00 San Francisco, Cal., November 18, 1907.

On or before August 1, 1908, Central Counties Land Company, a California corporation, promises to pay to the Capay Ditch Co., or order, at its office in the City of Woodland, State of California, the sum of Ten Thousand Six Hundred and Twenty-five

($10,625.00) Dollars, with interest from date at the rate of Seven Per Cent (7%) per annum, both principal and interest payable in United States Gold Coin.

(Signed) CENTRAL COUNTIES LAND COMPANY.

By L. S. LACY,

Vice-president.

EDWARD O. ALLEN,

Secretary. [45]

(Endorsed: E. V. VANDERCOOK.

J. DALZELL BROWN.

Demand, notice of non-payment and protest waived.

E. P. VANDERCOOK,

J. DALZELL BROWN.)

And also debenture certificates of the Central Counties Land Company, numbered consecutively from 582 to 591, both inclusive, of the denomination of Five Hundred Dollars ($500.00) each.

That said deeds of conveyance, debenture certificates, and promissory notes, and all thereof, are now on deposit in said Bank of Woodland, and will so continue to be deposited thereat during said period of time above specified and all thereof, subject to your order, upon the payment by you to our credit at said Bank the full sum of Five Hundred and One Thousand Five Hundred and Seven and 62/100 Dollars ($501,507.62) in gold coin of the United States of America.

In the event of your failure to pay and deposit at said bank within said period of time the said full

amount and sum of said Five Hundred and One Thousand Five Hundred and Seven and 62/100 Dollars ($501,507.62) to our credit, and subject to our order, then, and in that event, we shall and do hereby elect to cancel, rescind and annul said referred to contract and agreement, and to, and we do hereby in such event, declare said referred to contract and agreement to be null and void, and of no force and effect, either in law or in equity; and in such event we do hereby notify you that upon the expiration of said period of time all your rights and privileges under and by virtue of said contract and agreement will terminate and end on said last-mentioned date. [46]

And the undersigned, in the event of your failure to pay said sum of Five Hundred and One Thousand Five Hundred and Seven and 62/100 Dollars ($501,507.62) within the time and at the place aforesaid, shall consider themselves and each of them released from all the obligations of said agreement, and of and from every act by them to be performed thereunder.

Time is hereby expressly made of the essence hereof.

(Signed) CAPAY DITCH CO.,
[Seal] By J. CRAIG,
President.
And L. D. STEPHENS,
Sec'y.

(Signed) STEPHENS AGRICULTURAL AND LIVESTOCK CO.
[Seal] By J. L. STEPHENS,
President.
And F. W. STEPHENS,
Secretary.
(Signed) BANK OF WOODLAND,
[Seal] By L. D. STEPHENS,
President.
And J. S. CRAIG,
Secretary.
(Signed) J. J. STEPHENS,
L. D. STEPHENS.
N. A. HAWKINS.
KATE S. CRAIG.
J. CRAIG,
P. N. ASHLEY.
J. L. STEPHENS.

Dated, January twenty-fourth, 1912. [47]

That at the time of so delivering the said Notice to the said Vandercook, the said conspirators, and each and all of them, and each and all of the parties of the second part to the aforesaid agreement with said Vandercook dated January 19th, 1907, well knew that there was not due from the said Vandercook, for and on account of the said contract, the sum of five hundred one thousand five hundred seven and 62/100 ($501,507.62) dollars, and that said sum was not then due and owing, or due or owing, and well knew that said sum would not be due and owing or due or owing from said Vandercook, or from any other person or persons, for or on account of the said

contract, on the said 24th day of March, 1912, and the parties of the second part to the said agreement of January 19th, 1907, and the said defendant conspirators, and each and all of them, well knew and had notice and were informed that neither the said Vandercook nor the said Central Counties Land Company had promised or agreed to make any payments under the aforesaid contract of January 19th, 1907, at Woodland, California, or at any place other than at the City and County of San Francisco, California, at which latter place the aforesaid contract with the said Vandercook was made, and at which latter place the said stock so agreed to be purchased by the said Vandercook was to be delivered to the said Vandercook upon final payment and completion of said contract, as provided for in said contract.

That all the interest due upon the bonds of the Yolo County Consolidated Water Company, and payable by the said Vandercook pursuant to the said agreement, was fully paid down to and including all interest due prior to the first day of October, 1908, and that all interest due on deferred payments on the purchase price of said stock mentioned in the agreement was paid down to and including the 19th day of January, 1908. [48]

That prior to the said 24th day of March, 1912, the said Vandercook had paid to the said parties of the second part to the said agreement, in principal and interest, for and on account of the said contract, the sum of $121,335.87, and had paid out, at the special instance and request of the parties of the second part to said agreement of January 19th, 1907, pursu-

ant to the terms thereof, the sum of $86,060.50.

That on said 24th day of March, 1912, the said parties of the second part to the said agreement with the said Vandercook did not have in their possession, custody or control, at Woodland, California, or elsewhere, the aforesaid shares of stock of the defendant Yolo County Consolidated Water Company covered by said agreement of January 19th, 1907, and were not in a position to, and could not, on said day deliver the same to the said Vandercook, or to any other person, at Woodland, California, but that on the said day and date the certificates representing the said shares of stock were in the custody of Frank J. Symmes, Esquire, Receiver of the California Safe Deposit and Trust Company, of San Francisco, California, an insolvent corporation, and were in the vaults of the said corporation in the City and County of San Francisco, State of California.

That on the 26th day of March, 1912, the said parties of the second part to the said agreement with the said Vandercook, obtained said certificates of stock, at San Francisco, California, from said Receiver of said California Safe Deposit and Trust Company, and thereupon, and without having procured the consent of the Railroad Commission of the State of California, attempted to sell, transfer, and deliver the same to the said defendant Yolo Water and Power Company, and that the said defendant Yolo Water and Power Company has ever since claimed to be, and now claims to be, the owner and holder thereof. [49]

That the defendant Capay Ditch Company, was, at

the time of such delivery, the owner and holder of 8,789 shares of the capital stock of the said defendant Yolo County Consolidated Water Company. That the said 8,789 shares of the capital stock of said defendant Yolo County Consolidated Water Company, and the certificates representing the same, were, as plaintiff is informed and believes, and therefore alleges, part of the assets and capital stock of the said defendant Capay Ditch Company, and could not be paid out or taken from the said defendant Capay Ditch Company without diminishing the capital stock of said corporation, but that nevertheless the said Capay Ditch Company attempted to and did receive, as a consideration for the aforesaid attempted sale thereof, certain money, stock and bonds of the said defendant Yolo Water and Power Company, and did thereafter, without taking any steps to lawfully decrease its capital stock, divide and distribute the same among the several stockholders of the said defendant Capay Ditch Company in proportion to their respective interests in the shares of stock held by them in the defendant Capay Ditch Company, and that the defendant Craig received a large share thereof on his own account, and that, as an executor, he also received a large share on account of the Estate of Kate S. Craig, deceased, one of the parties to the said agreement of January 19th, 1907, she having died on or about the 23d day of July, 1912.

That soon after receiving said stock, the said defendants Craig, Brady, Phillips, White, Hull, Jr., Parmalee, and White and Company, with the connivance, assistance and consent of the other defendants

hereto, caused the defendant Yolo Water and Power Company to issue and deliver to them instruments, in form bonds, of the par or face value of $700,000.00, or thereabouts, which said bonds were a part of the bonds so issued [50] pursuant to the aforesaid proceedings, and said defendant White and Company, pursuant to said conspiracy, underwrote and promised to purchase $2,500,000.00 par value of said bonds, to be paid for as the money was required and called by said defendant Yolo Water and Power Company, for land purchases and construction work and incidental expenses. That said defendant White and Company has marketed or resold some of said bonds, and still have $1,800,000.00, or thereabouts, of said issue still on hand and undisposed of.

That plaintiff is informed and believes, and upon such information and belief avers, that there has been paid over to the said defendant Joseph Craig, and his agent aforesaid, as and for the commission and share of said defendant Craig in the moneys derived by and through the said fraudulent scheme and conspiracy, a large sum of money, the exact amount of which is unknown to this plaintiff, but which can be ascertained only upon a discovery, and that the said defendant Craig also received, in addition to the said sum of money, a number of the bonds, a block of the said preferred stock, and a large block of the said common stock of the said defendant Yolo Water and Power Company, the face or par value of the bonds and the amount of the preferred stock and common stock of said corporation so received by said defendant Craig being unknown to this plaintiff, and can

only be ascertained upon a discovery.

That, as plaintiff is informed and believes, and therefore alleges, there was similarly divided between and among the said defendants Pike, Brady, White, Phillips, Hull, Jr., Parmalee, and White and Company, as and for their share of the property obtained as profit or commission by and through the said fraudulent scheme and conspiracy, large sums of money, stock and bonds, the exact amount of which is unknown [51] to plaintiff, but which can be ascertained upon a discovery.

That having broken said contract with said Vandercook, and having effected through said breach and notice and acts the rescission thereof (said Vandercook having elected to treat same as a rescission), said conspirators, in furtherance of said fraudulent scheme and conspiracy, set about to secure for the said Yolo Water and Power Company, and indirectly for themselves as stockholders and bondholders therein, all of the properties and assets of said Central Counties Land Company, California Industrial Company, and Central California Power Company, which were essential to the aforesaid enterprise.

That to that end, on the 1st day of April, 1912, the defendant Yolo Water and Power Company, at the direction of said conspirators, filed in the Superior Court of the State of California in and for the County of Lake, a certain proceeding in condemnation, which said proceeding is entitled, Yolo Water and Power Company, a corporation, plaintiff, versus State of Calfornia, and others, defendants, and is

Action Numbered 2140 of the records of the said Court, and on the 10th day of April, 1912, filed in said court a proceeding in condemnation entitled, Yolo Water and Power Company, a corporation, plaintiff, versus Guilford L. Molesworth, and others, defendants, to which said action last named said E. P. Vandercook is a party defendant, and which is Action numbered 2143 of the records of the said court.

That in and by the said actions the said defendant Yolo Water and Power Company seeks to condemn all of the lands bordering upon or lying beneath the waters of the said Clear Lake, including lands belonging to said Central Counties Land Company, and its aforesaid allied corporations, and also seeks to condemn all of the riparian lands in Lake County, California, on Cache Creek, including lands essential to said [52] enterprise and belonging to one or more of said three allied corporations, and which stood and stand of record in the name of E. P. Vandercook, Arthur H. Goldsmith, and the defendant Joseph Craig, and others, all of which said lands had been acquired for the purposes of the said enterprise, and were deemed essential thereto and which as the said defendant Yolo Water and Power Company well knew, were held by the said persons above named in trust for one or more of said allied corporations.

That although the said respective actions have been pending since the said 1st and 10th days of April, 1912, as aforesaid, no summons therein has ever been served upon the said E. P. Vandercook or

upon the Central Counties Land Company and said allied corporations, or upon its or their Trustees, or upon any or either of them.

That the lands so standing in the name of defendant Joseph Craig, and embraced in said condemnation action Number 2143, are described as follows:

> "The southeast quarter of the northeast quarter and the northeast quarter of the southeast quarter of Section 31; the north half of the southwest quarter, the northwest quarter of the southeast quarter, the west half of the northeast quarter and the northeast quarter of the northeast quarter of Section 32; the south half of the southeast quarter, the northwest quarter of the southeast quarter, the northeast quarter of the southwest quarter, the southwest quarter of the northeast quarter, and the southeast quarter of the northwest quarter of Section 29; the west half of the southeast quarter of Section 20; all in Township 13 North, Range 6 West."

That said lands were purchased and acquired by said defendant Craig while acting for, and as the agent of, said Central Counties Land Company, and were paid for with the funds of said corporation, and said defendant Craig has, at all times prior to the time when the same were acquired by plaintiff, held the same in trust for said Central Counties Land Company, and now holds the same in trust for this [53] plaintiff as the successor in interest of said Central Counties Land Company.

That for many years prior to November 30th, 1911,

one L. J. Shuman was the agent and employee of said Central Counties Land Company, and that after the 30th day of November, 1911, said Shuman continued to render like service as the agent and employee of the directors of said corporation who, on and after said date became trustees for the benefit of the creditors and stockholders of said corporation. That one of said Trustees was the defendant Joseph Craig, as aforesaid. That said Shuman was, on the 1st day of April, 1912, and still is, in the employ of said Trustees.

That one S. T. Packwood was, on said 1st day of April, 1912, and for many years prior thereto had been, the owner and holder of a large quantity of land fronting on and partly submerged by said Clear Lake, which was essential to the aforesaid enterprise; that said land has several miles of frontage on said lake.

That said Central Counties Land Company, through several years, had a series of contracts with the said Packwood for the purchase of the said land, which said contracts were renewed from time to time, and the last one so made was by its terms to be and continue in full force and effect until July 15th, 1913. That the said Central Counties Land Company had paid to the said Packwood, for and on account of the said contract, more than twenty thousand dollars. That said Packwood realized that said Central Counties Land Company had made earnest endeavors to complete its payments under said contracts and was in sympathy with said corporation and its trustees, and recognized the equity which, in

good conscience, arose in its favor by reason of the aforesaid large payments on account of the purchase price of said property, and was willing to sell [54] and dispose of said lands to said Central Counties Land Company, or its trustees, for the balance of the agreed purchase price, with interest, over and above the payments so made on account, or to extend the time of payment under said contract, all of which was well known to said conspirators and to the said defendant Yolo Water and Power Company.

That said defendants and each of them well knew that the said Central Counties Land Company had the said contract with the said Packwood, and that the trustees of said company were desirous of renewing the same. That renewals of the said contract which had been so procured from time to time from the said Packwood had been negotiated for and secured by the said agent and employee of the Central Counties Land Company.

That the said conspirators, in further pursuance of their aforesaid fraudulent scheme and conspiracy, caused the defendant Yolo Water and Power Company to procure, and said corporation did procure, the aforesaid agent and employee of said Central Counties Land Company, while in the employ of the directors and trustees of said corporation, to obtain a new contract upon the said land in the name of the said agent or employee, at a price equal to the balance of the said agreed purchase price with interest on deferred payments added. That at the time of entering into said contract last referred to, said Packwood believed and supposed that the same was

for the use and benefit of said Central Counties Land Company, and for said reason agreed upon a contract price which was more than $23,000 less than the actual value of said lands. That said defendant Yolo Water and Power Company, acting secretly through said agent, paid to said Packwood $12,000, on or about October 1st, 1912, and agreed to pay to said Packwood $14,000 more on July 1st, 1913, and $14,000 more on January 1st, 1914. That the said Shuman has executed and delivered [55] to the defendant Yolo Water and Power Company an assignment of said contract with said Packwood, and that said Yolo Water and Power Company now claims to be entitled to said lands by reason of said fraudulent transaction. Plaintiff respectfully avers that in equity and good conscience plaintiff is entitled thereto as the successor in interest of said Central Counties Land Company.

That a parcel of property known as the Collier property, situate on said Clear Lake, and having a frontage thereon of one-half mile, or thereabouts, was mortgaged by said Central Counties Land Company to one L. D. Stephens to secure the payment to said Stephens of the sum of seven thousand ($7,000) dollars; that the said land at the time of the execution of said mortgage was, and ever since has continued to be and still is, of a value in excess of twenty-three thousand ($23,000.00) dollars, all of which facts were well known to said conspirators and to the defendant Yolo Water and Power Company, and to each and all of them. That the said mortgage to the said Stephens was in form a deed absolute.

That the said defendant Yolo Water and Power Company, at the instance and instigation of the said conspirators, and as their agent, and with full knowledge of the fact that the said instrument was a mortgage, and of the rights and equities therein of the said Central Counties Land Company and its Trustees, at some time subsequent to December 11, 1911, procured from the said Stephens an instrument purporting to be a deed of conveyance conveying to it the said property, and now claim to own the said property. That the defendants herein, and each and all of them claim that the said Collier land is subject to the said so-called trust deed so executed at the defendant Oakland Bank of Savings, and recorded as aforesaid, and that the said deed of trust and the record thereof is a cloud upon the title to the said land to which, as hereinabove [56] set forth, the plaintiff has succeeded.

That said conspirators well knew, from and after June, 1911, that it was an essential part and parcel of the said enterprise to utilize for irrigation both the usual and surplus flow from Clear Lake and Cache Creek, and that actual diversions and appropriations of the necessary water were to be made just as soon as said enterprise was financed and the merger company in a condition to proceed diligently with the work of excavation and construction consequent upon water appropriations in order to comply with the law.

That with such knowledge, and in further pursuance of said fraudulent scheme and conspiracy, the said defendant Yolo Water and Power Company, on

the 28th day of May, 1912, at the direction and instigation of said conspirators, entered upon the said Spring Valley ranch, without the consent of plaintiff's predecessors in interest, and posted a Notice, purporting to be a Notice of Appropriation of Water. That the same was so posted at or near the aforesaid dam site upon the said Spring Valley ranch. That said Spring Valley ranch was, as aforesaid, on said date, private property held in trust by said trustees and former directors of said Central Counties Land Company. That said Notice of Appropriation was and is in the words and figures following, to wit: [57]

Notice of Appropriation of Water, Lake County, California.

By YOLO WATER AND POWER COMPANY.

TO WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN: (1) That Yolo Water and Power Company, a corporation, organized and existing under and by virtue of the laws of the State of California, and having its principal place of business at Oakland, in said State, hereby claims and appropriates three hundred thousand (300,000) inches of water, measured under a four-inch pressure, flowing in this stream, and that said corporation hereby exercises and asserts the right to the use of the running water flowing in this stream to the extent and in the amount above set forth.

(2) That the purpose for which said corporation claims said water, and the place of the intended use thereof, are as follows, to wit:

This stream is the only outlet of a Lake or body of water situate in Lake County, California, known and described as CLEAR LAKE, and which lake has an area of about eighty (80) square miles, with a water-shed of about five hundred (500) square miles, from which water-shed the water flows into said lake through streams or creeks known as KELSEY, ADOBE, COLE, MIDDLE, SCOTTS, and other creeks, streams, channels and springs tributary to said lake.

The stream upon which this notice is posted, and the waters of which are hereby claimed and appropriated, is known and described as CACHE CREEK. [58]

The waters that flow into said lake from said creek, streams and springs are discharged through this stream or channel, and flow easterly and southerly, through a deep mountain gorge, for a distance of thirty (30) miles, where said creek then emerges into a narrow valley known as Capay Valley, in Yolo County; said stream thence flows southeasterly through said Capay Valley for a distance of about twenty (20) miles, where it emerges into a plain generally known and described as the floor of the Sacramento Valley, with a uniform slope to the Sacramento River into which River the said waters of Cache Creek are discharged, and thence flow to the sea.

That at the point where said Cache Creek emerges into the Sacramento Valley there begins a very large farming neighborhood comprising about two hundred thousand acres of land and consisting of several

hundred contiguous tracts of land which are owned, possessed and farmed by several hundred distinct proprietors, which lands are usually cultivated in alfalfa, grain, fruits, vegetables and other farm products, in so far as the nature of the soil and the moisture supplied thereto will permit.

Said farming neighborhood lies in the counties of Yolo, Colusa, and Solano, and is located in Township thirteen (13) North, Ranges one, two and three (1, 2, and 3), West, M. D. B. M., in Colusa County, and Township twelve (12) north, Ranges one and two (1 and 2) West, and one (1) East, and Township eleven (11) North, Ranges one and two (1 and 2) West, and Range one (1) East, and Township ten (10) North, Range one (1) West and one and two (1 and 2) East, and Township nine (9) North, Range one (1) West, and Range one (1) East, M. D. B. M., in Yolo County, and Township eight (8) North, Range one (1) West, and Range one (1) East, in Yolo County and Solano County, and seven (7) North, Range one (1) West, and one and two (1 and 2) East, in Solano County. [59]

That during the period from May first to November first in each year, the usual and natural flow of water in said Cache Creek where the same enters said farming neighborhood is sufficient to irrigate not to exceed fifteen thousand (15,000) acres of said lands, and the remaining lands of said farming neighborhood *and* not supplied with water for irrigation purposes, either from said creek or from any other source; that the said remaining lands are of an arable and productive character and subject and suscep-

tible to irrigation, and if the same can be irrigated the productiveness thereof, their value, their fitness for homes and the intensity of their cultivation can and will be greatly enhanced and increased thereby.

That this corporation is now the owner and appropriator of all the water that usually and naturally flows in said creek together with about one hundred and thirty (130) miles of canals, ditches and laterals now used for the irrigation of said fifteen thousand (15,000) acres, and the predecessors in interest of this corporation have, for many years, owned, controlled, managed, and operated said irrigation system, and devoted all of the usual natural flow of said stream during the irrigating season of each year to the beneficial use of irrigating said fifteen thousand (15,000) acres of land, and of supplying thereto water for irrigation so far as the flow of said stream would permit.

That for irrigation, sale, rental and distribution to said farming neighborhood of the flood, freshet and storm waters that now fall upon the water-shed of said Clear Lake, and thence flow into said lake, and out of the same, through said Cache Creek to the Sacramento River, and thence to the sea, which waters are now unused and wasted and being the water that is hereby claimed and appropriated, this corporation proposes and intends immediately to construct a dam across this stream at or near the point where this notice is posted, and thereby impound, **[60]** retain and store in said Clear Lake said flood and storm waters in sufficient quantities to raise the surface of said lake ten (10) feet above

the low-water mark officially established and fixed by the United States Government; and that the waters of said Lake so impounded will be held and retained in said Lake until required for the irrigation of said farming neighborhood, when said waters will be released, as needed, through gates or other mechanical appliances built in or about said dam, and thence conveyed through the natural channel of said Cache Creek to a point at or near the center of Township ten (10) North, *E*-ange two (2) West, M. D. B. M., where said water will be diverted from said channel of Cache Creek on either bank thereof by means of a head-gate and two (2) canals, each forty-five (45) feet wide on the bottom, carrying seven (7) feet of water, which canals with such necessary lateral canals and ditches, will be constructed to convey said water to said lands to be irrigated as aforesaid.

That this corporation proposes and intends to construct a canal three hundred (300) feet in width, and of sufficient depth to properly convey the impounded waters of said CLEAR LAKE for a distance of about ten thousand (10,000) feet, more or less, to a point where the natural channel of said Cache Creek will be sufficient to carry the waters hereby claimed and appropriated.

(3) That this notice is posted on the north bank of said Cache Creek on a large cottonwood tree at what is commonly known as the Boat landing about 2000 feet above the Lower Lake Bridge across Cache Creek and about 600 feet west from house now occupied by G. C. Wilkinson.

Dated: May 28, 1912.

[Corporate Seal]

YOLO WATER AND POWER COMPANY.

By THOS. PRATHER,
President.

THEODORE A. BELL,
Secretary.

P. N. ASHLEY, Witness. **[61]**

That thereafter, and on the 29th day of May, 1912, the said Notice of Appropriation was recorded in Volume 4 of Miscellaneous Records, at page 197, Lake County Records. That the filing and recording of the said Notice was an act performed in pursuance of the aforesaid fraudulent scheme and conspiracy and with the procurement, knowledge, connivance, and consent of the said defendants Craig, Brady, Hull, Jr., Phillips, White, Parmalee, and White and Company and their servants and agents.

That if any rights of any kind or character were or have since been acquired by virtue of said Notice, the same belong in equity and good conscience to this plaintiff.

That the above-named J. W. Northup and Ottomar H. Van Norden had, in the course of their negotiations aforesaid, disclosed to the said conspirators, and said conspirators well knew, that it was the plan and intention of the parties to the said merger, upon the completion thereof and as soon as the preliminary expenses of said enterprise were financed, and as a means of strengthening the credit of the enterprise and of raising and securing further moneys

for the development of said enterprise, to solicit and secure contracts and agreements with land owners in the vicinity of the said proposed system of canals and ditches, whereunder the merger company should sell, or agree to sell, to them permanent water rights to be perpetually appurtenant to their lands.

That in June, 1912, said conspirators proceeded to and did adopt and use said plan so disclosed to them, and proceeded to and did secure from and with land owners divers contracts, whereby the defendant Yolo Water and Power Company sold or agreed to sell water rights for lands aggregating 50,000 acres or thereabouts, which said contracts were at the rate of about $20.00 per acre cash, or $25.00 per acre payable in ten years, and are of the value of one million ($1,000,000.00) dollars. **[62]** That, as a result of the fraudulent advantage so taken, an asset of the value of one million dollars has thus been diverted from the possession and legal ownership of the said allied corporations, and is now held in the name of said defendant Yolo Water and Power Company. That in equity and good conscience, all benefit to be derived from said contracts belong to plaintiff as the successor in interest of the said allied corporations.

That no actual excavation or construction of works for the purpose of diverting any water pursuant to said Notice has as yet been performed or made.

That the defendant Yolo Water and Power Company has never made any application to the State Water Commission of California for a permit to appropriate water or the use of water for the genera-

tion of electricity or electrical power, nor has it ever made application to the said State Water Commission of California for a license to divert and store the surplus waters of either the said Clear Lake or the said Cache Creek.

That the various acts and conduct aforesaid of the said defendants were planned, intended and calculated to wreck and financially ruin and destroy, as aforesaid, the said Central Counties Land Company and its allied corporations, and to wreck and ruin and destroy the said merger. That said plans have to that extent succeeded. That as a result of the acts and conduct of the said defendants, as aforesaid, said Central Counties Land Company and said California Industrial Company and said Central California Power Company were unable to secure money or means with which to continue in active business, or to continue in existence as corporations. That for failure to pay the license taxes of said Central Counties Land Company for the year 1911 due to the State of California the franchise [63] of said corporation and its right to do business as a corporation was forfeited on the 30th day of November, 1911.

That on and after said 30th day of November, 1911, the directors of the said Central Counties Land Company, including the defendant Joseph Craig, became by operation of law trustees of said corporation, for the purpose of winding up its affairs, and said directors ever since have continued to be and still are Trustees of the said corporation, although said defendant Craig has failed, refused and neg-

lected to participate in the winding up of the affairs of said corporation.

That on the 9th day of April, 1913, the plaintiff corporation was organized, as aforesaid, under the laws of the State of Arizona; that the organization of said corporation was brought about at the instance of divers creditors of the said Central Counties Land Company; that the creditors of said last-named corporation were each and all persons who had been defrauded in and by the aforesaid scheme and conspiracy. That thereafter the claims and demands of all the creditors, so far as known to plaintiff, against said Central Counties Land Company, amounting to $700,000.00 or thereabouts, were duly assigned, transferred and set over unto this plaintiff, or agreed to be so assigned, transferred and set over, and the claims of all the creditors of said California Industrial Company and of the said Central California Power Company were likewise transferred, assigned, and set over to this plaintiff, and thereupon there was issued to various creditors of the said corporations, in consideration thereof and exchange therefor, a total of thirty-five hundred (3500) shares of the capital stock of this plaintiff, of the par value of one hundred ($100.00) dollars each. **[64]**

That thereafter the Trustees of the said Central Counties Land Company, in partial satisfaction of the said creditors' claims, sold, assigned, transferred and set over unto this plaintiff all of the assets and property, choses in action, rights and equities of every kind and character arising out of the transactions herein referred to, and belonging to the said

Central Counties Land Company, or vested in them as Trustees, and thereupon said credtors' claims so assigned were, by agreement between plaintiff and said Trustees, satisfied in an amount in excess of the value of the assets so received by this plaintiff from said Trustees, and due and proper provision was made for paying to any creditors of said Central Counties Land Company who might thereafter be discovered, or who had not so assigned his claim to plaintiff, a just and true *pro rata* of his or their claim or claims, in the ratio of the total amount of such claims to the total value of all of the assets of said Central Counties Land Company, and said transaction was duly ratified and approved by former stockholders of said Central Counties Land Company owning and holding more than two-thirds of the capital stock of said defunct corporation; and thereafter the Trustees of the said California Industrial Company and the Trustees of the said Central California Power Company (the rights of each of said last-named corporations to do business having theretofore been forfeited for nonpayment of the State license tax), in consideration of the cancellation of all of the indebtedness of the said respective corporations, have sold, assigned, transferred, conveyed, set over and delivered to plaintiff all of the assets, properties, claims, and equities of every kind and character belonging to the said two last-named defunct corporations, or belonging to or vested in them as Trustees [65] thereof. That the assets so received by plaintiff were of less value than the outstanding creditors' claims against said corporations,

and that plaintiff's stockholders include substantially all of the creditors of said defunct corporation, who, as aforesaid, were defrauded by the said scheme and conspiracy.

The plaintiff is now the owner and holder of all of the aforesaid properties, rights, choses in action, equities and assets formerly owned by said defunct corporations and their Trustees.

That plaintiff is now the owner and holder of all of the choses in action, rights and equities of the aforesaid Central Counties Land Company, California Industrial Company, and Central California Power Company, and of substantially all, if not all, of the creditors' claims against said defunct corporations, and of the claims of the Trustees of said defunct corporations, including all choses in action, rights and equities accrued or accruing to them, or to any or either of them, by reason of the aforesaid fraudulent acts and conduct of the said parties to the said fraudulent scheme and conspiracy, and of the defendant Yolo Water and Power Company, the agent and instrumentality of the said conspirators as aforesaid.

That plaintiff has a capital stock of One Million ($1,000,000.00) Dollars, and that three hundred and fifty thousand ($350,000.00) dollars of said capital stock is fully paid up and issued as hereinabove set forth.

That divers secured creditors of said defunct Central Counties Land Company have, by agreement with certain stockholders, and for adequate and valuable consideration, assigned their mortgages to

plaintiff, and the lands so acquired by [66] plaintiff have been freed from large encumbrances and liens, and plaintiff now has assets of a value in excess of its issued capital stock, and is in a condition to proceed with the aforesaid enterprise.

That plaintiff now owns or controls, either in fee simple or for reservoir and overflowage purposes, more than one-half of the frontage of said Clear Lake, including said Spring Valley ranch and dam site.

That plaintiff owns and holds the water appropriations to the amount of 500 second-feet or upwards, on said lake, made under the statutes of the State of California as the same existed prior to the year 1911, which were the first in time and are first in right; that within sixty (60) days after the Notices of Location under which plaintiff claims said water rights were posted, plaintiff's predecessors commenced the survey and trail building necessarily incident to the excavation and construction of the works in which the said claimant and plaintiff intended to divert said water, and plaintiff's said predecessors and plaintiff, since its acquisition of said claims, have and has prosecuted the work diligently and uninterruptedly, and have built more than eleven miles of trail and have expended in labor thereon over $5,000.00, and have expended upon surveys in and about the work necessarily incident to the excavation and construction of the works in which plaintiff intends to divert said waters, upwards of twenty thousand dollars, and have expended in acquiring lands for the reservoir, which is a part of the works essen-

tial to the diversion of said water, money or its equivalent in the amount of more than one hundred thousand ($100,000.00) dollars.

That said appropriations are good and valid and are now in full force and effect, and plaintiff is informed and verily [67] believes, and therefore alleges, that it has the right thereunder to erect a dam upon its lands at the mouth of said Clear Lake and to divert the waters of said Clear Lake and Cache Creek for the purpose of generating electricity and electrical power, and for purposes of irrigation.

That plaintiff owns and holds more than seven thousand (7,000) acres of land bordering upon or now overflowed by said Clear Lake.

That since its incorporation as aforesaid, and in order the better to carry out its purposes and to utilize the aforesaid water rights, plaintiff has duly made application to the State Water Commission of California for a permit to appropriate, for the generation of electricity and electrical power, all of the unappropriated waters of the said Cache Creek, being all the waters thereof now or heretofore actually used by said defendant Yolo County Consolidated Water Company in its canals as aforesaid, and has also duly filed with said State Water Commission of California its application for a permit to appropriate all of the aforesaid waters so actually used in the said canals by the said defendant Yolo County Consolidated Water Company for the purpose of generating electricity and electrical power; and plaintiff also has made application to said State

Water Commission of California for a license and permit to erect a dam and to divert and store all of the natural flow and storm waters of the said Clear Lake, including all the waters known as the Siegler Creek, and all of the waters flowing out of said lake into and through the said Cache Creek at all seasons.

That there are no other applications on file with the State Water Commission of California for the appropriation of the said water or any part or portion thereof for any or [68] either of the purposes aforesaid, and that plaintiff's application is the first and only application therefor, and has priority over any other applications that may be made.

That it is not necessary to the aforesaid enterprise for plaintiff to acquire or own in fee simple the canal or ditch system and laterals now or formerly owned or controlled by defendant Yolo County Consolidated Water Company, nor is it necessary that plaintiff should have, nor does plaintiff herein seek a return, of the stock of the Yolo County Consolidated Water Company; but plaintiff respectfully represents and alleges that it is just and equitable that there be had in this action an equitable condemnation whereunder plaintiff shall be permitted to have the use of said distributing system, consisting of canals or ditches and laterals, of said Yolo County Consolidated Water Company, for the purpose of conveying the waters to be impounded in Clear Lake by it, to the persons who, and upon the lands which, may have need of the same for irrigation.

And in that behalf and connection plaintiff avers that it has both the legal and equitable prior right

to divert and store in Clear Lake, for the purpose of generating electricity and electrical power, the water flowing out of said Clear Lake through Cache Creek at all seasons, including all surplus, storm or flood water, and also all of the natural flow thereof not hitherto appropriated, and has also the prior and sole right to secure a permit for, and to erect a dam for, said purpose at or near the outlet to the said lake.

That the surplus waters, and the storm, flood or waste waters, and the hitherto unused natural flow of Cache Creek so to be stored in said lake by reason of the erection of said dam, and to be diverted therefrom for the purpose of generating electricity and electrical power, will, when so diverted, belong to plaintiff, and will be available for purposes of [69] irrigation.

That there are no rights to divert or appropriate the water to be stored in said lake by means of said dam so to be erected which are superior or equal to plaintiff's right, and that neither of the defendants has any right whatsoever to dam said lake, or to store the surplus waters of Cache Creek therein, or to store therein any flood and storm waters whatsoever.

That by reason of the matters and things herein alleged, plaintiff also owns and holds the equitable title to the benefits, if any, of the appropriation and location for irrigation purposes which defendant Yolo Water and Power Company caused to be posted on said Spring Valley ranch and recorded on May 29th, 1912, as aforesaid.

Plaintiff further alleges that by reason of the matters and things herein set forth, plaintiff is in equity

and good conscience entitled to the beneficial enjoyment of all of the aforesaid contracts so made as aforesaid with said land owners for the said sale of water to the owners of the 50,000 acres of land accessible to the said canal system of defendant Yolo County Consolidated Water Company.

That defendants Yolo County Consolidated Water Company and Yolo Water and Power Company are entitled to the usual and normal flow of Cache Creek at the times and seasons, and to the extent, that said waters were utilized prior to the incorporation of said defendant Yolo Water and Power Company, but to no other or greater extent.

That defendant Yolo Water and Power Company claims to own all of the stock of the Yolo County Consolidated Water Company; that said Yolo County Consolidated Water Company is the owner of those certain canals or ditches, together with their laterals, situate, lying and being in the County of Yolo, State [70] of California, and more particularly described as follows:

[Description of Certain Property Owned by Yolo County Consolidated Water Co.]

1.

The canal or ditch known as the Moore ditch which takes water from Cache Creek at a point three and one-half (3½) miles or thereabouts east of the town of Madison; that at said point said defendant owns a permanent dam which was constructed at a cost of $10,000 or thereabouts; from said dam there is a ditch 4 miles long and 20 feet wide at the bottom, with a grade of 3 feet per mile, capable of carrying

150 second-feet or thereabouts; also 12 miles of ditch connecting with the ditch last described, 12 feet wide at the bottom, together with 150 miles or thereabouts of lateral distributing ditches.

2.

That certain ditch or canal known as the Capay Ditch which takes water from Cache Creek about 12 miles above the said Moore Ditch; that upon said site, the said defendant Yolo County Consolidated Water Company or the defendant Yolo Water and Power Company—this plaintiff is not advised which—has erected a permanent dam during the year 1912; plaintiff is not advised as to the cost of the said dam. From said dam said ditch extends 37 miles, where it enters a natural slough some 20 miles in length, and connected with said ditch and slough there are upwards of 50 miles of laterals.

3.

That certain ditch or canal known as the Adams Ditch, which starts 1¾ miles below the said Capay Ditch on the opposite side of the creek and has 16 miles of ditch or canal, 6 miles of natural slough and upwards of 10 miles of laterals; that there is no permanent dam at the intake of the said Adams Ditch.

That the purpose for which said ditches were constructed was to divert the natural flow of said Cache Creek during the [71] irrigating season, which begins about the first of May and ends ordinarily about the first of October.

That the said canals or ditches have a combined intake capacity of 500 second-feet or thereabouts. That said defendant Yolo County Consolidated

Water Company and the said defendant Yolo Water and Power Company have not, nor has either of them, ever used or utilized said ditches to their full capacity.

That the natural flow of said Cache Creek is comparatively small during the summer months and does not, at the beginning of the summer months, exceed ——— second-feet; that the same rapidly diminishes until toward the end of the said summer season it usually ceases altogether and during a portion of the said irrigating season there is at times no natural flow whatever in said stream or into said ditches.

That said two defendants above last named have not, nor has either of them, any right to store or divert the surplus of storm waters from said creek, or to store or divert the same for any purpose.

That said canals and ditches, and their laterals, extend into portions of the said Yolo County which are in need of water for irrigating purposes, and they afford a convenient and suitable method or way of reaching upwards of 100,000 acres of land which have never yet been irrigated but which are in need of water for irrigation.

That the water owned and controlled by defendants, and which they have the right to divert, is insufficient to properly irrigate the lands now immediately under and in reach of said canals or ditches and their laterals.

That lying below the level of said ditches, and immediately irrigable therefrom, are more than 50,000 acres of land which would be, immediately benefited if it could be supplied with adequate water for irrigation purposes. [72]

That it is the purpose and intent of plaintiff to reach said lands with suitable canals, ditches and laterals and to conduct water through the same and to sell and dispose of said water to the land owners or occupants and to furnish enough additional water to supply any deficiency between the amount or quantity of water now furnished by defendants, and a uniform, regular and sufficient quantity for the adequate irrigation thereof; and to sell also to the land owners and occupiers of such lands perpetual and other water rights which shall become appurtenant to estates in such lands.

That the said purposes of plaintiff aforesaid can be accomplished by and through a common use by plaintiff and the said defendants of the said canals or ditches and laterals.

That the use in common with said defendants of said ditches, canals and laterals of which plaintiff hereby seeks an equitable condemnation, will in no way or manner diminish or destroy the defendants' use thereof, and such common use may be had without difficulty or appreciable inconvenience to defendants.

That plaintiff is ready, able and willing to pay its proper proportion of the upkeep and a proper rental or other return to the said defendants for the said common use thereof, and to pay to the defendants for the taking of an easement, servitude, or right to have and enjoy such use, such compensation as this Honorable Court shall find to be the value thereof and to be just and equitable.

That the taking of such servitude, easement, or

use in, over and through said canals, ditches, and laterals is necessary for the following reasons, in addition to those hereinabove appearing; that it is to the public benefit, and to the benefit of the owners and occupiers of the lands which, as aforesaid, are in need of and will be benefited by irrigation, that as little land as possible be taken for and occupied by the canals, [73] ditches and laterals, that the system so owned or controlled by defendants occupies a total actual area of many hundreds of acres of land.

That if a use in common as herein set forth is not permitted, it will be necessary for plaintiffs to duplicate said system, and to that end to acquire by purchase or condemnation, or both, sufficient lands or rights of way for said purpose.

That the lands so acquired would, by reason of the use to which the same would so be put by plaintiff, be withdrawn from agriculture and rendered unproductive of crops, which would be to the detriment of the public.

That it would be necessary, moreover, to cross and recross defendants' canals or ditches and laterals many times with the canals or ditches and laterals of the plaintiff, and that in order to effect such crossings and recrossings costly construction would be required.

That the charge which plaintiff will be permitted by the State authorities to make to *consums* for said water will depend upon cost of construction, and the burden of any unnecessary outlay or cost of duplication will fall upon and be detrimental to the owners or occupiers of the land receiving such irrigation.

That plaintiff is informed and believes that the defendants White, Parmalee, Hull, Jr., Pike, Phillips, Brady and White and Company are large stockholders and bondholders in the said defendant Yolo Water and Power Company, owning and holding large blocks of preferred and common stock, either in their own names or in the names of other persons, on the books of said corporation, all of which said stock they have received as their commissions for and on account of their participation in the transactions aforesaid. That the transfer books of said defendant Yolo Water and Power Company are [74] within the jurisdiction of, and subject to, the process of this Honorable Court.

That over $9,200,000.00 par value of the said bonds of defendant Yolo Water and Power Company are still unissued and are in the control of the defendant Oakland Bank of Savings. That of the $800,000.00 par value, or thereabouts, which have been issued, a large number are in the possession and control of the said defendants Craig, Parmalee, White, Brady, Hull, Jr., Phillips and White and Company, the said last-named defendants having received the same as and for their commission and profit from the aforesaid scheme and conspiracy.

That it is necessary and proper that an injunction *pendente lite* be issued to restrain and enjoin the defendants from disposing of or issuing or transferring the said stocks and bonds.

That it is necessary and proper that a Receiver be appointed to take charge of the said stock to preserve the property involved in this Bill from waste or in-

jury pending the litigation, and in order that the equitable relief hereinafter prayed for, or such equitable relief as may be proper in the premises, may be adequately adjudged and decreed and proper and adequate relief be awarded and enforced.

That plaintiff is now the lawful owner and holder of the aforesaid Spring Valley ranch and the said Collier Ranch. That the said deed of trust so executed as aforesaid to the defendant Oakland Bank of Savings to secure the payment of the aforesaid bond issue, which said deed of trust is recorded in Lake County, California, as aforesaid, and includes said Spring Valley ranch by specific description, and which, by its general language, covers and includes all property which said Yolo Water and Power Company has acquired or shall acquire, and which, therefore, covers the said Collier Ranch, and is a cloud [75] upon the title of plaintiff to the said properties, and tends to depreciate the value thereof.

That the plaintiff has heretofore filed Bills in this Honorable Court to have said instruments which are in the form of deeds absolute as aforesaid, adjudged to be mortgages in fact.

That plaintiff is informed and believes, and upon such information and belief avers, that the defendants Yolo Water and Power Company, Capay Ditch Company, and Yolo County Consolidated Water Company have acquired certain lands, and overflowage rights in lands, bordering upon Clear Lake, and have also acquired certain riparian and other rights in and to lands bordering upon Cache Creek all of which said lands and rights are essential to plain-

tiff's aforesaid enterprise, and all of which said lands plaintiff is informed and believes and upon such information and belief avers, the said defendants, by reason of the matters and things herein set forth, are chargeable with as Trustees for this plaintiff.

That plaintiff is ready, able and willing to do equity and hereby offers to submit to such equitable terms or to such orders and decrees in the premises as this Honorable Court shall deem just and equitable, and shall impose as a condition to the granting of the relief hereinafter prayed for and is ready and willing to do and hereby offers to do equity in all things in the manner and to the extent that this Honorable Court shall require.

That plaintiff has no speedy, plain and adequate remedy in the ordinary course of law.

WHEREFORE, plaintiff prays the decree of this Honorable Court, sitting in equity:

1. That all of the defendants to this Bill who may [76] have received any moneys, stock or bonds, as a commission or promotion fee in and about the aforesaid fraudulent transaction be required to account to this plaintiff therefor, and to pay over such profits, commission, or promotion fee in whatever form the same may now be to this plaintiff.

2. That an account thereof be had and that, pending such accounting, the defendants herein, and each and all of them be restrained and perpetually enjoined from issuing or transferring any stock or bonds so received as profits or commission or promotion fee, and that the defendant Yolo Water and

Power Company be restrained and perpetually enjoined from permitting a transfer of said stock upon its books, or from registering any of the said bonds.

3. That a Receiver be appointed to take charge of such moneys, stocks, bonds, and certificates of shares of stock so paid, received or intended as a profit or commission or promotion fee as are within the jurisdiction of the Court pending the final disposition thereof by this Honorable Court.

4. That all of said unissued bonds in the possession or control of defendants, or of any or either of them, be surrendered up and canceled.

5. That it be ordered, adjudged, and decreed that the aforesaid bond issue is invalid, null and void as to this plaintiff and all persons claiming under this plaintiff.

6. That suitable provision be made for the just and proper protection of any and all persons who may have purchased any of said bonds in good faith, for a valuable consideration and without notice, and that defendants other than the said defendant trustee for the bondholders, be compelled to make restitution to such persons as may have so acquired the same in good faith, for a valuable consideration and without notice. [77]

7. That the lien of the said Deed of Trust, if adjudged to be a valid lien at all, be confined in and by the decree of this Honorable Court to the properties situate in Yolo County, California, and owned by the defendants Yolo County Consolidated Water Company and Yolo Water and Power Company.

8. That the said deed of trust so recorded, as

aforesaid, in Lake County, California, and the record thereof, be adjudged to be a cloud upon plaintiff's title to the aforesaid Spring Valley ranch and the aforesaid Collier ranch, and removed and canceled as such cloud.

9. That it be ordered, adjudged, and decreed that any right of eminent domain claimed by the defendants, or any or either of them, as to the lands situate in the Counties of Lake, Colusa and Yolo in the State of California, bordering on said Clear Lake or Cache Creek, and embracing said Cache Creek, and essential to the aforesaid enterprise, and other lands in said Counties riparian to said Cache Creek, is subordinate and secondary to the prior right of the plaintiff to condemn the same.

10. That it be ordered, adjudged, and decreed that the lands, if any, which have been heretofore condemned or otherwise acquired by the said defendant Yolo Water and Power Company, either in Cache Creek or on the borders of said Clear Lake, including all the lands embraced in the aforesaid condemnation suits so filed by said Yolo Water and Power Company as aforesaid, and all other lands essential to the said enterprise, are now held by the defendant Yolo Water and Power Company in trust for this plaintiff, and that any right or interest which the said defendant Yolo Water and Power Company claims therein, or in the aforesaid Packwood lands, be adjudged and decreed to be held by it in trust for this plaintiff, and that an accounting be had as to the proper cost [78] thereof, and that this plaintiff be required, as a condition to the recovery of the said lands or interests,

to do equity within such reasonable time as this Honorable Court may deem just and equitable.

11. That the defendant Yolo Water and Power Company be restrained and perpetually enjoined from further proceeding with or taking action in the aforesaid condemnation suits so brought by it as aforesaid, other than to dismiss the said actions wholly, or as to some or any of the defendants therein named, and that said defendant Yolo Water and Power Company be further restrained and perpetually enjoined from disputing the prior right of plaintiff to condemn the said lands.

12. That it be ordered, adjudged, and decreed that the aforesaid Notice of Water Location, so recorded as aforesaid in Volume 4 of Miscellaneous Records, at page 197, of Lake County Records, was made for the use and benefit of this plaintiff and its predecessors in interest, and that the rights acquired thereunder, if any, are now vested in this plaintiff and that the defendant Yolo Water and Power Company or, if said defendant shall refuse, then a Commissioner to be appointed by this Honorable Court, be ordered, required or directed to convey the rights so acquired under the said Notice to this plaintiff, upon plaintiff's doing equity in regard thereto within such reasonable time as this Honorable Court shall fix.

13. That the defendant Yolo Water and Power Company be restrained and perpetually enjoined from making any greater, further, different or additional use of the waters naturally flowing in Cache Creek than the use which was made of the aforesaid

waters by the defendant Yolo County Consolidated Water Company, during the period or seasons of irrigation prior to the date of the incorporation of the defendant Yolo Water and Power Company; that the quantity and period of such use, and the extent of use during the Spring and Summer months and during the [79] irrigation months, and the extent of the use to which defendants or any or either of them may be entitled therein, be ascertained and fixed in a decree to be rendered by this Honorable Court; that the defendant Yolo County Consolidated Water Company and the defendant Yolo Water and Power Company be further restrained and perpetually enjoined from any other, different, additional or more extensive use of the said waters than the use so ascertained and fixed.

14. That the defendant Yolo Water and Power Company be further restrained and perpetually enjoined from making any use whatsoever, other than for the purpose of irrigation, of any of the waters naturally flowing through Cache Creek or out of Clear Lake, or any use whatsoever of the flood or storm waters of the said Clear Lake, including said Siegler Creek, and of the said Cache Creek.

15. That the contracts to irrigate the said 50,000 acres or thereabouts which the defendant Yolo Water and Power Company has acquired as aforesaid in fraud of the rights of Plaintiff be adjudged and decreed to be held by said defendant Yolo Water and Power Company in trust for plaintiff, and that said defendant be compelled to transfer, assign, set over and convey said contracts, or any rights acquired

thereunder, to this plaintiff upon plaintiff's doing equity with respect thereto in the manner and to the extent that this Honorable Court shall adjudge to be fair, proper, and equitable, within such reasonable time as the Court shall direct, and that in the event of the failure or refusal of the said defendant to make such transfer, assignment, setting over or conveyance, that then a Commissioner be appointed by this Honorable Court with authority, and charged with the duty, to make such assignment, for and in the name of said defendant Yolo Water and Power Company.

16. That an equitable condemnation be had and made in [80] favor of plaintiff and against defendants of the use of the aforesaid distributing system of said Yolo County Consolidated Water Company, which said distributing system consists of canals or ditches and laterals as aforesaid, such use to extend to the full capacity of the canals or ditches and laterals, over and above the use thereof for the natural flow, as aforesaid, during the irrigation months, and without any right upon the part of plaintiff to interfere with the lawful use thereof by defendants Yolo Water and Power Company and Yolo County Consolidated Water Company, to the extent of the actual use thereof for irrigating purposes which had been actually enjoined by the said defendant Yolo County Consolidated Water Company prior to the 11th day of December, 1911.

17. That defendants be compelled to set forth the rights which they now claim to have in and to the lands, and in and to the overflowage rights in lands,

bordering upon Clear Lake and Cache Creek; that inquiry be made into the said claim, and, if found valid, then that further inquiry be made as to whether or not the same are held in trust for this plaintiff, and, if so, that conveyances thereof to this plaintiff be decreed and directed, upon such terms as may be just and equitable, and if such rights are found to exist in defendants, or any or either of them in absolute ownership, then that the same be condemned herein to the use and benefit of this plaintiff to the full extent that may be necessary for the aforesaid enterprise.

18. For costs of suit, and for such other, further, different, or additional relief as is meet in the premises, and conformable to equity.

CHARLES S. WHEELER and
JOHN F. BOWIE,
Solicitors for Plaintiff.

HARDING & MONROE,
Of Counsel. [81]

State of California,
City and County of San Francisco,—ss.

H. S. Elliot, being first duly sworn, deposes and says:

That he is an officer, to wit, the President of Power and Irrigation Company of Clear Lake, a corporation, plaintiff in the above-entitled action, and that he makes this affidavit in its behalf.

That he has read the above and foregoing Bill in Equity and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters which are therein stated on his informa-

tion or belief, and as to those matters that he believes it to be true.

H. S. ELLIOT.

Subscribed and sworn to before me this 13th day of May, 1913.

[Notarial Seal] ALICE SPENCER,
Notary Public in and for the City and County of San Francisco, State of California.

(Here follows exhibit "A," which is omitted as per praecipe of plaintiff.)

[Endorsed]: Filed May 14, 1913. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk. [82]

In the District Court of the United States, in and for the Northern District of California, Second Division.

No. 19—EQ.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Plaintiff,

vs.

JOSEPH CRAIG et als.,

Defendants.

Order Dismissing the Above-entitled Action.

CHARLES S. WHEELER and JOHN F. BOWIE, Attorneys for Plaintiff.

DENSON, COOLEY & DENSON, E. A. SHAW, BERT SCHLESSINGER, THEODORE A. BELL and MASTICK & PARTRIDGE, Attorneys for Defendants.

This action being based upon a chose in action assigned to plaintiff upon which the assignor could not sue in this Court, and that fact having been called to the attention of the Court, it is ordered that the said action be, and the same is hereby dismissed.

April 30th, 1914.

M. T. DOOLING,
Judge.

[Endorsed]: Entered April 30th, 1914. Walter B. Maling, Clerk. [83]

In the United States District Court for the Northern District of California.

No. 19—IN EQUITY.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, an Arizona Corporation,
Plaintiff,

vs.

JOSEPH CRAIG, et al.,
Defendants.

Decree.

THIS matter came on to be heard on the fourth day of April, 1914, upon a motion made by the defendants to dismiss plaintiff's bill of complaint upon the ground that the above-entitled court is without jurisdiction to hear and determine the said cause; thereupon the said motion was submitted to the Court for its decision, and all and singular, the premises having been duly considered by the Court and it appearing that the said court is without jurisdiction to hear and determine the said cause.

IT IS HEREBY ORDERED, ADJUDGED AND DECREED that the said bill of complaint and the said cause be and the same are hereby dismissed, and that the said defendants recover their costs herein, taxed at the sum of ——— dollars.

Dated, May 5th, 1914.

M. T. DOOLING,
Judge of Said Court.

[Endorsed]: Filed and Entered May 5th, 1914. Walter B. Maling, Clerk. [84]

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In the District Court of the United States for the Northern District of California, Second Division.

Number 19—EQUITY.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Plaintiff,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE AND COMPANY, a Common Name Under

Which More Than Two Persons are Associated in Business and Transact Such Business,

Defendants.

Petition for Order Allowing Appeal and Order Allowing Appeal.

To the Honorable Court Above Entitled:

The above-named Plaintiff, POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a corporation, considering itself aggrieved by the decree made and entered in the above-entitled court on the 5th day of May, 1914, in the above-entitled cause, hereby appeals therefrom to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, for the reasons and upon the grounds specified in its Assignment of Errors filed herewith, and prays that this appeal may be allowed; and that a transcript of the record, proceedings and papers upon which said decree was made and entered as aforesaid, duly authenticated, may be sent to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, sitting at San Francisco, California.

And your petitioner further prays that the proper order touching the security to be required of it to perfect its [85] said appeal be made.

CHARLES S. WHEELER and
JOHN F. BOWIE,
Solicitors for Plaintiff.

Order Allowing Appeal.

The foregoing Petition for Appeal is hereby granted, and the appeal is allowed, upon the petitioner

filing a bond in the sum of Three Hundred ($300) Dollars, to be conditioned as required by law.

Dated, October 27, A. D. 1914.

M. T. DOOLING,
Judge.

[Endorsed]: Filed Oct. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk. [86]

In the District Court of the United States, for the Northern District of California, Second Division.

No. 19—EQUITY.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Plaintiff,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE AND COMPANY, a Concern Name Under Which More Than Two Persons are Associated in Business and Transact Such Business,

Defendants.

Assignment of Errors on Appeal.

Now comes the plaintiff in the above-entitled action by its attorneys, Charles S. Wheeler and John F. Bowie, and avers that the decree entered in the above-entitled cause on the 5th day of May, 1914, is erroneous and unjust to the plaintiff, and files with its petitioner for an appeal from the said decree, the following Assignment of Errors, and specifies that the said decree is erroneous in each and every of the following particulars, viz.:

1. The said District Court of the United States, for the Northern District of California, was not without jurisdiction to hear and determine the said cause, and the order, judgment, and decree of said court granting defendants' motion and dismissing the said bill of complaint and the said cause for want of jurisdiction is therefore erroneous.

2. The said Court erred in holding that plaintiff's cause of action is based upon a chose in action assigned to plaintiff upon which the assignor could not sue in this court, forasmuch as plaintiff's cause of action is not based upon a [87] chose in action within the meaning of that phrase as used in Section 24 of the Judicial Code, but is an action to obtain various forms of equitable relief originating out of plaintiff's title to real property, including the removal of clouds from title and the adjudication that a deed of trust purporting to create a lien upon plaintiff's real property to secure a bonded indebtedness is void and that the bonds so secured be surrendered up and canceled.

3. The said Court erred in holding that plaintiff's cause of action is based upon a chose in action within the meaning of the law conferring jurisdiction upon the said Court, forasmuch as plaintiff's bill sets forth a cause of action to remove a cloud upon the title to plaintiff's real property; and the said Court having jurisdiction at least as to the said cause of action, it was error to dismiss the said bill for want of jurisdiction as to any other matters set forth in the bill.

4. The Court erred in holding that this action is based upon a chose in action assigned to plaintiff upon which the assignor could not sue in the said court, forasmuch as the said action is based upon transfers of real property and is an action to quiet title to real property and to remove a cloud therefrom and to obtain preventive and other equitable relief with regard thereto, and that as to said matters the Court has jurisdiction and that such jurisdiction draws to the Court the various equities of plaintiff set forth in the bill, forasmuch as equity will prevent a multiplicity of suits, and the Court having obtained jurisdiction as to one or more of the aforesaid matters will take unto itself jurisdiction over all of them.

5. The Court erred in holding that plaintiff's cause of action is based upon a chose in action assigned to plaintiff upon which the assignor could not sue in this court, and that the Court had no jurisdiction, forasmuch as plaintiff's cause [88] of action embraces a cause of action to remove a cloud from title to real property and the said cause of action saves the right to Federal jurisdiction and brings within equitable cognizance, as branches of the single

controversy, the various other matters set forth in the complaint, thereby avoiding a multiplicity of suits; and the said statute restricting the right of suits by assignees is not applicable when jurisdiction attaches as to at least one cause of action well stated.

WHEREFORE, plaintiff prays that the said decree be corrected or reversed, and the District Court directed to deny said Motion to Dismiss, or that such other relief be awarded as the nature of the case demands.

CHARLES S. WHEELER, and
JOHN F. BOWIE,
Attorneys for Plaintiff.

[Endorsed]: Filed Oct. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk. [89]

In the District Court of the United States for the Northern District of California, Second Division.

Number 19—EQUITY.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,
Plaintiff,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a

Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE AND COMPANY, a Common Name Under Which More Than Two Persons are Associated in Business and Transact Such Business,

Defendants.

Bond on Appeal.

KNOW ALL MEN BY THESE PRESENTS, That we, Power and Irrigation Company of Clear Lake, as principals, and Pacific Coast Casualty Co., as surety, of the City and County of San Francisco, State of California, are held firmly bound unto Joseph Craig, William A. Brady, E. L. Phillips, Archibald S. White, C. L. Parmalee, George H. Hull, Jr., Roy M. Pike, Oakland Bank of Savings (a corporation), Yolo County Consolidated Water Company (a corporation), Capay Ditch Company (a corporation), Yolo Water and Power Company (a corporation), and White and Company (a common name under which more than two persons are associated in business and transact such business), in the sum of Three Hundred and no/100 ($300) Dollars, lawful money of the United States, to be paid to them and their respective executors, administrators, and successors and assigns; to which payment, well and truly to be made, we bind ourselves and each of us, jointly and severally, and each of our successors and [90] assigns, by these presents.

Sealed with our seals and dated this 28 day of October, A. D. 1914.

WHEREAS, the above-named Power and Irriga-

tion Company of Clear Lake has obtained an appeal to the Circuit Court of Appeals of the United States to correct or reverse the decree of the District Court for the Ninth District of California, in the above-entitled cause.

NOW, THEREFORE, the condition of this obligation is such that if the above-named Power and Irrigation Company of Clear Lake shall prosecute its said appeal to effect and answer all costs if it fails to make good its plea, then this obligation shall be void; otherwise to remain in full force and effect.

POWER AND IRRIGATION COMPANY
OF CLEAR LAKE,

[Seal] By H. S. ELLIOTT,
President.

By R. H. BORLAND,
Secretary.

PACIFIC COAST CASUALTY CO.,

[Seal] By R. W. STEWART,
Attorney in Fact.

Approved this 28 day of October, A. D. 1914.

M. T. DOOLING,
Judge.

[Endorsed]: Filed Oct. 28, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk. [91]

In the District Court of the United States, for the Northern District of California.

No. 19—EQUITY.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Plaintiff,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE AND COMPANY, a Common Name Under Which More Than Two Persons are Associated in Business and Transact Such Business,

Defendants.

Praecipe for Transcript on Appeal.

To the Clerk of Said Court:

Sir: Please make up, print, and issue in the above-entitled cause a certified transcript of the record, upon an appeal allowed in this cause, to the Circuit Court of Appeals of the United States for the Ninth Circuit, sitting at San Francisco, California, the said transcript to include the following:

Bill in Equity, omitting Exhibit "A";
Order for Decree, dated April 30, 1914;
Decree of Dismissal, Dated May 5, 1914;
Petition for Order Allowing Appeal, and Order Allowing same;
Assignment of Errors;
Bond on Appeal;
Citation on Appeal;
Praecipe for Transcript on Appeal. [92]

You will please transmit to the Circuit Court of Appeals, with the record to be prepared as above, the original Citation on Appeal.

CHARLES S. WHEELER, and
JOHN F. BOWIE,
Solicitors for Appellant.

Service and receipt of a copy of the within Praecipe this 28th day of Oct. 1914, is hereby admitted.

DENSON, COOLEY & DENSON,
BERT SCHLESINGER,
A. E. SHAW,
MASTICK & PARTRIDGE,
Attorneys for Def.

[Endorsed]: Filed Oct. 28, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk. [93]

[Certificate of Clerk U. S. District Court to Transcript of Record.]

In the District Court of the United States, in and for the Northern District of California, Second Division.

No. 19—IN EQUITY.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Plaintiff,

vs.

JOSEPH CRAIG et al.,

Defendants.

I, Walter B. Maling, Clerk of the District Court of the United States, in and for the Northern District of California, do hereby certify the foregoing ninety-three (93) pages, numbered from 1 to 93, inclusive, to be full, true and correct copies of the records and proceedings as enumerated in the praecipe for transcript of record, as the same remain on file and of record in the above-entitled cause, and that the same constitute the record on appeal to the United States Circuit Court of Appeals for the Ninth Circuit.

I further certify that the cost of the foregoing transcript of record is $56.40; that said amount was paid by Charles S. Wheeler and John F. Bowie, Esqs., attorneys for plaintiff; and that the original Citation issued in said cause is hereto annexed.

In testimony whereof, I have hereunto set my

hand and affixed the seal of said District Court this 25th day of November, A. D. 1914.

[Seal] WALTER B. MALING,
Clerk.
By J. A. Schaertzer,
Deputy Clerk. [94]

Citation on Appeal.

UNITED STATES OF AMERICA,—ss.

The President of the United States, to Joseph Craig, William A. Brady, E. L. Phillips, Archibald S. White, C. L. Parmalee, George H. Hull, Jr., Roy M. Pike, Oakland Bank of Savings, a Corporation, Yolo County Consolidated Water Company, a Corporation, Capay Ditch Company, a Corporation, Yolo Water and Power Company, a Corporation, and White and Company, a Common Name Under Which More Than Two Persons are Associated in Business and Transact Such Business, Greeting:

You are hereby cited and admonished to be and appear at a United States Circuit Court of Appeals, for the Ninth Circuit, to be holden at the City of San Francisco, in the State of California, on the 27 day of November, 1914, being within thirty days from the date hereof, pursuant to an order allowing an appeal, of record in the clerk's office of the District Court of the United States for the Northern District of California, in the suit numbered "19— Equity" in the records of said court, wherein Power and Irrigation Company of Clear Lake, a corporation, is plaintiff and appellant, and you and each of

you are defendants and appellees, to show cause, if any there be, why the decree rendered against the said plaintiff and appellant, as in said order allowing appeal mentioned, should not be corrected, and why speedy justice should not be done to the parties in that behalf.

WITNESS the Honorable M. T. DOOLING, United States District Judge for the Northern District of California, this 28 day of October, 1914.

M. T. DOOLING. [95]

Service and receipt of a copy of the within Citation this 28th day of Oct., 1914, is hereby admitted.

DENSON, COOLEY & DENSON,
BERT SCHLESINGER,
A. S. SHAW,
MASTICK & PARTRIDGE,
Attorneys for Defs.

[Endorsed]: No. 19—Equity. In the United States District Court for the Northern District of California. Power and Irrigation Company of Clear Lake, a Corporation, Plaintiff, vs. Joseph Craig et al., Defendants. Citation on Appeal—Original. Filed Oct. 28, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

[Endorsed]: No. 2521. United States Circuit Court of Appeals for the Ninth Circuit. Power and Irrigation Company of Clear Lake, a Corporation, Appellant, vs. Joseph Craig, William A. Brady, E. L. Phillips, Archibald S. White, C. L. Parmalee, George H. Hull, Jr., Roy M. Pike, Oakland Bank of

Savings, a Corporation, Yolo County Consolidated Water Company, a Corporation, Capay Ditch Company, a Corporation, Yolo Water and Power Company, a Corporation, and White and Company, a Common Name Under Which More Than Two Persons are Associated in Business and Transact Such Business, Appellees. Transcript of Record. Upon Appeal from the United States District Court for the Northern District of California, Second Division.

Filed November 25, 1914.

FRANK D. MONCKTON,

Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.

By Meredith Sawyer,

Deputy Clerk.

No. 2521

United States
Circuit Court of Appeals
For the Ninth Circuit.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Appellant,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE & COMPANY, a Common Name Under Which More Than Two Persons are Associated in Business and Transact Such Business,

Appellees.

Supplemental Transcript of Record.

Upon Appeal from the United States District Court for the Northern District of California, Second Division.

In the United States Circuit Court of Appeals, for the Ninth Circuit.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,
Plaintiff and Appellant,
vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE AND COMPANY, a Concern Name Under Which More Than Two Persons are Associated in Business and Transact Such Business,
Defendants and Appellees.

Stipulation for Further Transcript of Record on Appeal.

IT IS HEREBY STIPULATED AND AGREED, BY and between the parties to the above-entitled action, that the defendants and appellees may cause to be included in the printed Transcript of Record in said action duly certified copies of the following:

1. That portion of the Answer to the Bill in Equity denominated the Sixth Further and Separate Defense to said Action beginning at page 69, line 19, and ending page 69, line 30, of said Answer.

2. That certain Minute Order of April 4, 1914, wherein it was ordered that the question of jurisdiction raised by the Answer be submitted without argument.

Dated: December 1st, 1914.

CHARLES S. WHEELER and
JOHN F. BOWIE,
Solicitors for Plaintiffs and Appellants.
A. E. SHAW,
DENSON, COOLEY & DENSON,
BERT SCHLESINGER,
MASTICK & PARTRIDGE,
THEODORE A. BELL,
Solicitors for Defendants and Appellees.

[Endorsed]: Filed Dec. 1, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

In the United States District Court for the Northern District of California.

No. 19.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Plaintiff,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation,

CAPAY DITCH COMPANY, a Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE AND COMPANY, a Common Name Under Which More Than Two Persons are Associated in Business and Transact Such Business,

Defendants.

Answer to Bill in Equity.

* * * * * * * * *

SIXTH.

That this Honorable Court has no jurisdiction over either the persons of these defendants or of the subject matter of this action, in this:

That defendants are informed and believe, and on such information and belief allege, that the said plaintiff corporation was formed under the laws of the State of Arizona for the purpose alone of conferring jurisdiction upon this Honorable Court and of divesting the Courts of the State of California of jurisdiction hereof.

* * * * * * * * *

At a stated term, to wit, the March term, A. D. 1914, of the District Court of the United States of America, in and for the Northern District of California, Second Division, held at the Courtroom in the City and County of San Francisco, on Saturday, the 4th day of April, in the year of our Lord one thousand nine hundred and fourteen. Present: The Honorable WILLIAM

C. VAN FLEET, District Judge, and The Honorable MAURICE T. DOOLING, District Judge.

Before DOOLING, D. J.

No. 19—EQUITY.

POWER & IRRIGATION CO. OF CLEAR LAKE

vs.

JOSEPH CRAIG et al.

Order of Submission of Jurisdictional Question, etc.

In this suit no one being present on behalf of plaintiff, John S. Partridge and A. E. Shaw, Esqrs., appearing on behalf of defendants, on motion of Mr. Partridge it was ordered that the question of jurisdiction raised by the answer be submitted without arguments.

Ordered that defendants' application for order allowing interrogatories to be answered and plaintiff's application for order for settlement of interrogatories, etc., be continued to April 18, 1914.

In the District Court of the United States for the Northern District of California, Second Division.

No. 19—EQUITY.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Plaintiff,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY

M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, YOLO WATER AND POWER COMPANY, a Corporation, and WHITE AND COMPANY, a Concern Name Under Which More Than Two Persons are Associated in Business and Transact Such Business,

Defendants.

Praecipe for Further Transcript on Appeal.

To the Clerk of Said Court:

SIR: In addition to those portions of the record requested in the Praecipe of the plaintiff in the above-entitled action, please include in the certified transcript of record, upon an appeal allowed in this cause to the Circuit Court of Appeals of the United States, for the Ninth Circuit, the following:

1. That portion of the Answer to the Bill in Equity denominated the Sixth Further and Separate Defense to said Action beginning at page 69, line 19, and ending page 69, line 30, of said Answer.

2. That certain Minute Order of April 4, 1914, wherein it was ordered that the question of jurisdiction raised by the Answer be submitted without argument.

Dated: December 1st, 1914.

A. E. SHAW,
DENSON, COOLEY & DENSON,
BERT SCHLESINGER,
MASTICK & PARTRIDGE,
THEODORE A. BELL,
Solicitors for Defendants.

Receipt of a copy of the within Praecipe this 1st day of December, 1914, is hereby admitted.

CHARLES S. WHEELER and
JOHN F. BOWIE,
Attorneys for Plaintiff.

[Endorsed]: Filed Dec. 1, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

[Certificate of Clerk U. S. District Court to Additional Portions of Record on Appeal.]

In the District Court of the United States, in and for the Northern District of California, Second Division.

No. 19—IN EQUITY.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,
Plaintiff and Appellant,
vs.
JOSEPH CRAIG et al.,
Defendants and Appellees.

I, Walter B. Maling, Clerk of the District Court of the United States, in and for the Northern District of California, do hereby certify the foregoing to be full, true and correct copies of the Stipulation for further transcript of record on appeal; sixth separate defense of answer; order of submission of jurisdictional question and praecipe for further transcript on appeal, as the same remain of record and on file in the office of the Clerk of said District Court.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of said District Court this 4th day of December, A. D. 1914.

[Seal] WALTER B. MALING,
Clerk.
By J. A. Schaertzer,
Deputy Clerk.

[Ten Cent Internal Revenue Stamp. Canceled Dec. 4, 1914. J. A. S.]

[Endorsed]: No. 2521. United States Circuit Court of Appeals for the Ninth Circuit. Power and Irrigation Company of Clear Lake, a Corporation, Appellant, vs. Joseph Craig, William A. Brady, E. L. Phillips, Archibald S. White, C. L. Parmalee, George H. Hull, Jr., Roy M. Pike, Oakland Bank of Savings, a Corporation, Yolo County Consolidated Water Company, a Corporation, Capay Ditch Company, a Corporation, Yolo Water and Power Company, a Corporation, and White & Company, a Common Name Under Which More Than Two Persons are Associated in Business and Transact Such Business, Appellees. Supplemental Transcript of Record. Upon Appeal from the United States District Court for the Northern District of California, Second Division.

Received and filed December 4, 1914.

F. D. MONCKTON,
Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.
By Meredith Sawyer,
Deputy Clerk.

No. 2521.

IN THE

United States Circuit Court of Appeals

FOR THE NINTH CIRCUIT.

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Appellant,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, JR., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a Corporation, YOLO WATER & POWER COMPANY, a Corporation, and WHITE & COMPANY, a common name under which more than two persons are associated in business and transact such business,

Appellees.

BRIEF OF APPELLANT.

CHARLES S. WHEELER and
JOHN F. BOWIE,
Attorneys for Appellant.

HARDING & MONROE,
Of Counsel.

Filed this.....day of March, 1915.

F. D. MONCKTON, Clerk,

By.....Deputy Clerk.

THE JAMES H. BARRY CO

IN THE

United States Circuit Court of Appeals

FOR THE NINTH CIRCUIT

POWER AND IRRIGATION COMPANY OF CLEAR LAKE, a Corporation,

Appellant,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, Jr., ROY M. PIKE, OAKLAND BANK OF SAVINGS, a Corporation, YOLO COUNTY CONSOLIDATED WATER COMPANY, a Corporation, CAPAY DITCH COMPANY, a Corporation, YOLO WATER & POWER COMPANY, a Corporation, and WHITE & COMPANY, a Common Name Under which more than two persons are associated in business and transact such business,

Appellees.

No. 2521.

BRIEF OF APPELLANT.

PRELIMINARY STATEMENT OF FACTS.

The Bill in this action was dismissed for alleged want of jurisdiction, the ground being that the suit is brought to recover upon a chose in action for which appellant's assignor could not have sued in the Federal Courts (Tr., p. 95).

The purpose of the action is to obtain various forms of equitable relief: among other matters, to establish a constructive trust in a large amount of real and personal property, including contracts for water rights; and to compel the conveyance thereof to appellant; to remove a cloud upon appellant's title created by a trust deed given to secure a bonded indebtedness; to have it adjudged that because of the fraudulent conduct of certain of the appellees, the appellant has a right to condemn certain lands, which right is superior to the right of defendant Yolo Water and Power Company; to enjoin the further prosecution of a condemnation suit now pending in the State Court; to enjoin the use of waters to which appellant is entitled; for the ascertainment and determination of the extent of the rights of certain defendants to the use of waters; for a decree permitting the joint use by appellant with defendant Yolo County Consolidated Water Company of certain ditches and canals (Tr., pp. 87-93).

The bill proceeds upon the theory that the Federal Court as a court of equity, having obtained jurisdic-

tion of the action for at least one or more of the purposes above indicated, will draw unto itself jurisdiction over all of the matters embraced in the bill, in order to finally dispose of the controversy and avoid a multiplicity of suits. And so it is immaterial that there may be some matters stated in the Bill which if standing alone would have debarred the jurisdiction. The following quotation illustrates this principle as applied to suits in which, among other matters, assignments of choses in action are involved:

> "The remaining ground of objection is that the court is without jurisdiction 'in respect to any of the water leases or contracts except the one option contract made directly with the complainant.' This objection rests upon the statutory limitation against suit by the assignee of a chose in action for its enforcement unless suable as well by the assignor in the Federal court, and upon the authorities holding bills for specific performance of contracts to be within such limitation. If it be assumed, however, that the rights derived through Mr. Clark are choses in action, and cannot confer jurisdiction, nevertheless the presentation of the jurisdictional cause—as thus rightly conceded to appear—*would save the right to Federal jurisdiction, and bring within equitable cognizance all the other matters referred to as branches of the controversy, saving multiplicity of suits. The statute is not then applicable when jurisdiction attaches for such cause well stated.*"

Howe & Davidson v. *Haughan,* 140 Fed., 182.

This, of course, is but an application of a general principle (*Pomeroy's Equity Jurisprudence,* Vol. 1, Sec. 181).

STATEMENT OF FACTS.

Put forth with such brevity as is consistent with the scope of the bill, the principal facts are as follows:

Clear Lake is a lake 22 miles long and eight miles wide, situated 1325 feet above sea level. Its outlet is through Cache Creek, which empties into the Sacramento River near Woodland. There is a great quantity of flood or waste water which could be stored in the lake by erecting a dam at the outlet. If the stored water were conducted toward the Sacramento Valley and properly utilized on its way, it would afford a large amount of electric power; and after being so used, thousands of acres of thirsty soil could then be irrigated by it (Tr., pp. 5-6).

This attractive situation brought about the incorporation in 1906 of three companies, which for convenience we will call the Allied Corporations. One—the Central Counties Land Company—was to buy up and own all of the land fronting upon the lake. Another—the California Industrial Company—was to own all of the riparian rights in the lake and was to be able to flood and overflow the lake shores to a desired level of ten feet. It was to sell the use of the stored water to the Central California Power Company,—the third corporation—which was to utilize it for generating electricity. After leaving the power plant the water was then to be devoted to irrigation (Tr., pp. 7-8).

But this was not all. For the purpose of utilizing the water for irrigation, said corporations were acting in cooperation with one Vandercook, who held a contract for the purchase of the stock of the Yolo County Consolidated Water Company. This latter corporation owned many miles of canal and irrigation ditches in Yolo County, and also rights in the natural flow of Cache Creek (Tr., pp. 9-19).

Under Vandercook's agreement with his vendors, the stock so to be purchased by him was placed in escrow with the California Safe Deposit & Trust Company to be by it delivered to Vandercook or his assigns in accordance with the terms of the agreement of purchase (Tr., p. 11).

The three Allied Corporations went ahead with the project, and between 1906 and June 1st, 1911, had purchased much property and performed much work and had laid out on the enterprise about One Million Dollars in cash (Tr., p. 9).

Vandercook by the last-named date had paid out on account of the purchase price of the stock above referred to, between One Hundred Thousand and Two Hundred Thousand Dollars (Tr., pp. 19-21).

A merger of the three Allied Corporations and Vandercook's interest was arranged. A corporation was organized for the purpose and, by mutual consent of the stockholders in the Allied Corporations, business was transacted in its name—the Central Counties Land

Company, however, bearing the principal expense (Tr., pp. 25-31).

The merger was in process of completion in June, 1911. While matters were in this shape, and the assets of the Allied Corporations so to be merged were of great actual and potential value, it became evident that more capital must be brought into the enterprise, or it would fail (Tr., p. 32).

Therefore, the Central Counties Land Company sent an agent to New York to interest Capital. A New York broker was also employed to aid in the matter. This agent and the broker took the matter up with Appellee White & Company. Maps and engineers' reports were laid before White & Company. They were interested, and by October 15, 1911, notified the Central Counties Land Company that they would go into the project; also that the funds were all arranged and that one of their associates would leave for California by the 28th of October, 1911, to inspect the property (Tr., pp. 35-36).

THE CONSPIRACY.

At this point one Joseph Craig begins to occupy the center of the stage. He was a large stockholder in the company which owned the canals in Yolo County and was one of those who had agreed to sell to Vandercook. He was also one of the Directors of the Central Counties Land Company. He had access to all the correspondence relating to the deal with White

& Company, and knew that matters had progressed to the point just noted. He conceived that he would make money by secretly arranging with White & Company to wreck the corporation of which he was a trustee. He got in touch with White & Company. They joined with Craig in a conspiracy to bring about a cancellation of the Vandercook agreement so that the said merger might be prevented, and the stock of the canal owning company might be turned over to White & Company at a large profit to him and to themselves; and they further conspired together to wreck and ruin the Central Counties Land Company, of which Craig was a director, and to acquire its project and properties at a trifling cost to themselves. The conspiracy was put into operation (Tr., pp. 37-40).

The Appellee Yolo Water and Power Company was organized as an agency to carry out the conspiracy. Craig, in furtherance of the conspiracy, procured the vendors of the stock of the canal owning corporation, notwithstanding the existence of the Vandercook agreement, to agree to sell the same stock to him, and then Craig transferred said last-named agreement to the said Yolo Water and Power Company (Tr., p. 42).

The next step taken by the conspirators was to cause service upon Vandercook of a notice calling upon him to pay over half a million dollars by March 24, 1912, or suffer a cancellation of his agreement for the pur-

chase of said stock (Tr., pp. 49-53). This they did, notwithstanding the fact that they well knew that the sum demanded was not and would not be due. Craig, the unfaithful director and trustee, was one of those who signed and made the demand (Tr., p. 55). On March 26, 1912, the certificates of stock covered by the Vandercook agreement and which had been delivered in escrow to the California Safe Deposit & Trust Co., were, without right, withdrawn by Craig from the Receiver of that defunct concern and turned over to the said Yolo Water and Power Company (Tr., p. 55).

Meanwhile, the conspirators were also busy about the lands of the Allied Corporations. They all knew, and the said Yolo Water and Power Company knew, that several properties essential to said enterprise owned by Central Counties Land Company were under mortgage to divers persons and that the mortgages were in the form of deeds absolute. They procured the respective mortgagees to execute conveyances of said lands to said Yolo Water and Power Company. On one of these parcels of land is situated the dam-site essential to the control of the lake (Tr., p. 43).

Even before the stock covered by the Vandercook agreement had been taken from the escrow holder, the conspirators issued to themselves the stock of their said Yolo Water and Power Company, in consideration of the said deeds so procured by them to said properties which in truth belonged not to them but

to the Allied Corporations, and also in consideration of the assignment of Craig's said fraudulent contract to deliver the stock already covered by the Vandercook agreement. They then caused bonds to be issued by said Yolo Water and Power Company and a deed of trust purporting to secure the same to be executed, which deed of trust covers said lands so belonging to said Allied Corporations. Said deed of trust is a cloud on the title thereto (Tr., pp. 45-46).

As previously planned, the conspirators had their corporation bring condemnation suits covering lands which Craig and others held in trust for said Central Counties Land Company, and also covering all other lands fronting on the lake which were owned by the Allied Corporations (Tr., p. 58). These suits have not been pushed, but, as intended, serve merely to cloud the title to these lands, thereby tying appellant's hands. The conspirators also fraudulently procured an agent of the Allied Corporations to take a new contract in his own name on some important lands on which the Allied Corporations had long had a contract. In this new contract the vendor, supposing he was dealing with the Allied Corporations, put the purchase price at an amount which represented only the balance remaining unpaid under the former contract. This agent has since transferred the contract so procured by him to the conspirators' corporation. In this way, the conspirators got the land by paying $23,000 less than its value (Tr., p. 63).

Said conspirators have gone upon the Spring Valley Ranch, which now belongs to appellant, and have posted a notice of water appropriation (Tr., p. 65). Under this, they claim adversely to the prior appropriations made by the grantors of and now held by appellant (Tr., p. 76).

They have acquired lands fronting on the lake essential to the said plans of the Allied Corporations and of the appellant, its successor in interest.

They have adopted for themselves the plan of the Allied Corporations to sell water rights for irrigation purposes and have procured contracts which, when water can be delivered under them, will net $1,000,000 (Tr., p. 71).

The conspirators have succeeded in their scheme so far as wrecking the merger and the Allied Corporations is concerned (Tr., p. 72). The bill points out that the Craig conspiracy was a fraud not only on the Allied Corporations but on the creditors of said corporations as well. Appellant corporation was organized by creditors of the said Allied Corporations, whose claims amounted to some $700,000. All of the properties and assets of the Allied Corporations have been transferred and conveyed to appellant.

Notwithstanding the many vicissitudes and losses brought about by said conspiracy, appellant still owns and holds more than 7,000 acres of land bordering upon or overflowed by Clear Lake (Tr., p. 77). It owns and controls more than half the frontage on the

lake (Tr., p. 76). It owns and holds the water appropriations on which it and its predecessors have expended over $105,000, and these appropriations are the first in right and give it priority on the lake (Tr., p. 76-77).

Craig was at all times a director and trustee of the Central Counties Land Company and his co-conspirators all along knew of this fact and of the fiduciary relation in which he stood (Tr., p. 38). They, as well as Craig, have received large sums of money and shares of stock and bonds as their share of the profits of the fraudulent deal (Tr., pp. 57-58).

A discovery will be necessary to ascertain the amount of these ill-gotten gains.

Appellant wants to go ahead with the enterprise. It seeks to remove the clouds on its title created by the conspirators. It asks to have the conspirators and their agency, the Yolo Water and Power Company, adjudged to be constructive trustees of what they have fraudulently obtained. It wants, moreover, to have equity say that it has a right to condemn the necessary lands on the lake which is superior to the right of the conspirators and their said corporate agency. It wishes the priority of its rights to the appropriated waters of the lake to be adjudged, and it wishes the extent of certain admitted rights of Yolo County Consolidated Water Company in the natural flow of Cache Creek to be admeasured and asks that any use in excess thereof be enjoined. As appellant has the

right to the waters, the conspirators cannot make good their contracts to deliver water under the water rights contracted for (Tr., pp. 71 and 79). These depend on storage in the lake. Appellant asks to be adjudged to be equitably entitled to the said contracts, and in order to deliver water under them, it asks for a decree giving it a joint use of certain ditches and canals now controlled by defendants because of the fraudulent cancellation of the Vandercook agreement (Tr., pp. 91-92).

Many other facts are alleged and other relief is asked for, but enough has been said to give a fair idea of the scope of the bill.

APPELLANT DOES NOT SUE TO RECOVER UPON A CHOSE IN ACTION.

The sole question here is simply this: Is appellant to be deemed merely the assignee of choses in action? And is this bill so framed that for jurisdictional purposes the suit must be deemed a mere suit to recover on a chose in action?

The answer is obvious. Never before has the present statute (Judicial Code, Sec. 24) or any of its predecessors (Stats. of 1789-1887-1888) been held to include within the designation "choses in action," claims such as are in suit here.

Repeated decisions have from the first confined said phrase to suits arising on contracts. It never has been supposed to include suits to establish constructive trusts

arising out of fraudulent transactions and conspiracies; nor suits to remove clouds from title, and the like.

On the contrary, it has been directly held that suits of the latter character are within the jurisdiction whenever the proper diversity of citizenship exists.

A case directly in point and quite similar in some respects to the case at bar is *Gest* v. *Packwood,* 39 Fed., 525, 537, which was decided in this Circuit in 1889. In that case it appeared among many other matters that one Carter and one Packwood had wrongfully obtained a sheriff's deed to certain real property which in equity belonged to one Rice and to the firm of Clark, Layton & Company. Thereafter, one Gest, the plaintiff, succeeded by mesne conveyances to the interest of the said Rice and the said firm. He brought suit against Carter and Packwood "for an accounting, and a conveyance of the legal title to the property wrongfully obtained by them from the sheriff" (p. 528). The Court said when the same objection to the jurisdiction was made that is made in the case at bar:

> "It is now objected that the plaintiff is simply the last assignee of a contract or contracts for the title to, or interest in, real property; and, as it does not appear that all the assignors could have maintained this suit on the ground of their citizenship, he cannot do so. . . .
>
> ". . . the bill alleges that since May 4, 1874, the plaintiff Gest, 'by a regular chain of conveyances and assignments,' has acquired 'all the right, title, and interest' which Rice, and Clark, Layton & Co. then had in said property, or the rents, issues, and profits thereof. This being so, he is the owner of the property in equity, subject to the lease made to Carter and Packwood. The legal title was wrong-

fully obtained by the latter after their sale to Rice, and they hold the same in trust for their vendee. A sale and conveyance of the property to Gest under such circumstances, or of all the right, title and interest of Rice and Clark, Layton & Co. therein, *is the sale and conveyance of the beneficial interest in the property, and not the mere assignment of a right of action thereabout.*"

Gest v. *Packwood, supra.*

Another more recent case is *Commonwealth S. S. Co.* v. *Am. Shipbuilding Co.,* 197 Fed., 780, 785, where the Court uses this language:

"The complainant's right to rescind the contract is not based on any contract rights transferred to it by the Hawgoods, *but the bills in their entirety proceed upon the theory that the rights of action exist in the complainant by reason of the fraud of the Hawgoods and the defendant.*

". . . The complainant makes no claim that it is the assignee of the Hawgoods. They allege that the Hawgoods were the trustees and merely held the legal title, and they rely on no cause of action which the Howgoods had or might claim they had at any time. The complainant is not relying on the right of the Hawgoods, *but upon the fraud of the Hawgoods and the defendant.*"

It has also often been held by the Federal Courts that conveyances of real property are not choses in action and that suits based upon the title conveyed by such deeds are not "suits to recover on choses in action" within the meaning of the statute. For example:

"Now, the exception extends to promissory notes and choses in action. The present suit is not founded upon either. *It is founded upon a conveyance of a title to land,* good (as far as appears) by the *lex loci situs. . . . The words, then, of the exception do not apply to the case.*

It is a case within the general descriptive words as to suitors, founding the jurisdiction of the circuit court."

Briggs v. *French,* 4 Fed. Cas., 119.

Similarly, it was said in *Sheldon* v. *Sill,* 8 How., 449, 450:

"The only remaining inquiry is, whether the complainant in this case is the assignee of a 'chose in action' within the meaning of the statute. The term *'chose in action'* is one of comprehensive import. . . . It is true, a *deed of title for land does not come within this description."*

"A conveyance of land is not a chose in action. . . . That the statute acts upon negotiable paper is clear. . . . *That it does not act on conveyances of real estate, either equitably or legally, would seem to be undoubted."*

Dundas v. *Bowler,* 8 Fed. Cas., 26.

"The conveyance by the marshal under the receivership proceedings . . . can hardly be considered merely as an assignment of the original contract under which the plant was erected. *It was a conveyance of real estate.* . . . There does not seem to be any likeness in the case to that of the assignee of a promissory note or other chose in action."

Portage City Water Co. v. *City of Portage,* 102 Fed., 769, 774.

"The bill states the complainant to be a citizen and resident of the State of Alabama, and the defendants to be citizens and residents of the State of Ohio. It has not been alleged, *and certainly cannot be alleged, that a citizen of one State having title to lands in another, is disabled from suing for those lands in the courts of the United States, by the fact that he derives his title from a citizen of the State in which the lands lie;* consequently,

the single inquiry must be whether the conveyance from M'Arthur to M'Donald was real or fictitious."

M'Donald v. *Smalley,* 1 Peters, 623.

The bill in the suit at bar counts upon some legal titles as well as upon some equitable titles:

It would make no difference, however, as already seen, if all of the titles were only equitable. We have quoted, *supra,* from *Gest* v. *Packwood,* 39 Fed., 525, 537, which was a case based on an equitable title. In the said case it is said:

"A sale and conveyance of the property to Gest under such circumstances, or of all the right, title, and interest of Rice and Clark, Layton & Co. therein, *is the sale and conveyance of the beneficial interest in the property, and not the mere assignment of a right of action thereabout. Manning* v. *Hayden,* 5 Sawy., 363; 1 *Perry, Trusts,* Sec. *227.* This author says:

"'The right of a party who has been defrauded of the title to his land is not a mere right of action to set the deed aside, but it is an equitable estate in the land itself, which may be sold, assigned, conveyed, and devised.'"

As stated at the outset, the Courts have again and again laid it down that the phrase "chose in action" as employed in the statute must be confined exclusively to cases arising on contract.

A characteristic expression to that effect is the following:

"We are of opinion that this clause of the statute . . . applies to cases only in which the suit is brought to recover the contents or to enforce the contract **contained in the instrument assigned."**

Deshler v. *Dodge,* 16 How., 622.

Again, in *Ambler* v. *Eppinger,* 137 U. S., 482, it is said that the excepted suits *"must be such as arise on contracts of the original parties."*

To the same effect is the following:

> "Upon the first question, it may be observed that the denial of jurisdiction of suits by assignees has never been taken in an absolutely literal sense. . . . And it has recently been very strongly argued that the restriction applies only to contracts 'which may be properly said to have contents'; 'not mere naked rights of action founded on some wrongful act, some neglect of duty to which the law attaches damages, *but rights of action founded on contracts which contain within themselves some promise or duty to be performed.*"
>
> *"And this view of the restriction seems to be warranted* by the consideration of the mischief which it was intended to prevent."

Bushnell v. *Kennedy,* 9 Wall., 387, 391-2.

See also:

Commonwealth S. S. Co. v. *Am. Shipbuilding Co.,* 197 Fed., 785-6;
Simons v. *Ypsilanti Paper Co.,* 33 Fed., 193;
Buckingham v. *Drake,* 112 Fed., 260;
Corbin v. *County of Black Hawk,* 105 U. S., 665.

Many other cases holding similarly might be cited.

It must therefore be considered as definitely settled that in the absence of a contract, there can never be said to be a *chose in action* in the sense in which the statute uses that phrase. The statute ousts the juris-

diction only when the complaint alleges that an existing contract is in some way broken or violated.

While of no consequence here, it may avoid confusion if we point out before closing, that Sec. 24 of the Judicial Code means by the phrase *chose in action* exactly what was meant by the same phrase in the Judiciary Act of 1789 and the statutes of 1887 and 1888.

The language in the Judicial Code differs slightly from that of the earlier acts, but the change was obviously made to meet repeated judicial criticisms. The courts had again and again said that the words in the earlier statutes "were not happily chosen" to convey the intended meaning and could not, therefore, be "taken in an absolutely literal sense."

> *Bushnell* v. *Kennedy,* 9 Wall., 391, 392;
> *Shoecraft* v. *Bloxham,* 124 U. S., 730.

See also:

> *Commonwealth S. S. Co.* v. *American, etc. Co.,* 197 Fed., 785, and cases cited therein.

Section 24 of the Judicial Code reads as follows:

> "No district court shall have cognizance of any suit (except upon foreign bills of exchange) to recover upon any promissory note or other chose in action in favor of any assignee, or of any subsequent holder if such instrument be payable to bearer and be not made by any corporation, unless such suit might have been prosecuted in such court

to recover upon said note or other chose in action if no assignment had been made."

Sec. 24, *Judicial Code,* subd. 1.

Where the earlier statutes read "suit to recover the *contents* of any promissory note or other chose in action," the Code says, "suit to recover *upon* any promissory note or other chose in action"; and later on where the earlier acts say, "unless such suit might have been prosecuted *to recover such contents,*" the Code says, "to recover *upon* said note or other chose in action."

A suit is brought *upon* a promissory note when it is brought to enforce the promise contained within the note, and this is precisely what the courts have interpreted the earlier statutes to mean. The word contents was "designed to embrace the rights the instrument conferred which were capable of enforcement by suit (*Shoecraft* v. *Bloxham,* 124 U. S., 735). The use of the words "contents of a" were "not happily chosen to convey this meaning," (*ib.*) and hence the change in the Code to the words "upon any," which carry the said intent in a more satisfactory way.

In view of what is above noted, no one would be justified in supposing that Congress intended to do anything else than to express this meaning when they came to codify this provision. Congress, however,

saw fit to put the matter beyond debate by incorporating the following section into the code itself:

> "The provisions of this Act, so far as they are substantially the same as existing statutes, shall be construed as continuations thereof, and not as new enactments, and there shall be no implication of a change of intent by reason of a change of words in such statute, unless such change of intent shall be clearly manifest."
>
> Sec. 294, *Judicial Code.*

We ask the Court's attention to one further consideration: We have said above that in no event is the matter of any consequence here. This is because the bill is based upon legal titles and also upon equitable estates which are not "choses in action," even if that phrase were now given a meaning by the courts far wider than ever given to it in the decided cases. In short, appellants' rights answer to no possible definition of a chose in action. But even if by some process of legal hermeneutics, unknown to us, the Court found itself able to say that plaintiff's claims are choses in action as the term is now used in the Judicial Code, nevertheless, we would not be affected by that circumstance, because the jurisdiction in this case must be determined not by the Judicial Code, but by the Statute of 1888. This follows from Sec. 299 of the Judicial Code, which declares

> "The repeal of existing laws . . . embraced in this Act *shall not affect any act done or right accruing or accrued* . . . ; but all . . . suits and proceedings for causes arising or acts done prior to such date" (i. e.

Jan. 1st, 1911) "may be *commenced* and *prosecuted* within the same time and *with the same effect* as if said repeal . . . had not been made."

Interpreting the foregoing clause, the Federal Courts have said:

"This section saves to the Federal Courts jurisdiction, not only of pending actions, but of causes of action which accrued prior to January 1st, 1912. *Lincoln* v. *Robinson* (D. C.), 194 Fed., 571; *Taylor* v. *Midland Valley R. Co.* (D. C.), 197 Fed., 323; *Dallyn* v. *Brady* (D. C.), 197 Fed., 494."

McKernan v. *North River Ins. Co.,* 206 Fed., 984, 986.

"What is now insisted upon by the motion to remand is, in effect, that the words 'causes arising or acts done prior to such date' shall be entirely eliminated, for no other effect can be given to these words except that causes which arose prior to January 1, 1912, although not yet sued on, still remain within the jurisdiction of the national courts, as if no change in the law had been made. If the intention of Congress by the enactment of Sec. 299 had been merely to save suits then pending, is it not reasonable to suppose that similar language would have been used as in subdivision 20 of section 24, and the words 'shall not affect any right accruing or accrued,' and again, 'any act done or right accruing or accrued before the taking effect of this act,' found in Sec. 299, omitted?"

Wells v. *Russellville, etc. Co.,* 206 Fed., 528.

In the case at bar, the conspiracy charged was inaugurated and had begun its operations in the fall of 1911 (Tr., pp. 37-40)—more than two months prior to January 1, 1912—the date on which the Judicial Code went into effect. Some of the rights of plaintiff

had "accrued" when the act went into effect. Others of the rights asserted are based upon acts subsequently performed; but all were in furtherance of the conspiracy, and the said rights were at least "accruing" on January 1, 1912. Whether "accrued" or "accruing" the jurisdiction would be saved by the provision above noted, even if the (to us) impossible meaning above suggested were placed upon section 24 of the Judicial Code.

But we beg again to repeat that Sec. 24 is but a codification of the earlier provisions.

In the case at bar the requisite citizenship exists. There is no contract which appellant is seeking to enforce; nor is it seeking to recover for a breach of any contract. Its director and trustee Craig has in violation of his fiduciary obligations entered into a conspiracy with White & Company to defraud both its predecessors in interest and itself. In pursuance of this conspiracy, Craig and White & Company, through their agency, the Yolo Water and Power Company, have obtained the legal title to certain properties and have initiated certain rights. These titles and rights they should, upon the allegations of the bill, be adjudged to hold as constructive trustees for appellant. They have, moreover, created a cloud upon the title of appellant to other real estate to which appellant now holds the legal title. The requisite diversity of citizenship is alleged. There is nothing in the bill,

therefore, to suggest that the case does not fall within the jurisdiction of the Federal Courts.

Appellant accordingly asks that the decree be reversed.

Respectfully submitted.

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No. 2521

IN THE

United States Circuit Court of Appeals

For the Ninth Circuit

POWER AND IRRIGATION COMPANY OF CLEAR LAKE (a corporation),

Appellant,

vs.

JOSEPH CRAIG, WILLIAM A. BRADY, E. L. PHILLIPS, ARCHIBALD S. WHITE, C. L. PARMALEE, GEORGE H. HULL, JR., ROY M. PIKE, OAKLAND BANK OF SAVINGS (a corporation), YOLO COUNTY CONSOLIDATED WATER COMPANY (a corporation), CAPAY DITCH COMPANY (a corporation), YOLO WATER AND POWER COMPANY (a corporation), and WHITE & COMPANY (a common name under which more than two persons are associated in business and transact such business),

Appellees.

BRIEF FOR APPELLEES.

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JOHN S. PARTRIDGE,
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Attorneys for Appellees.

Filed this.....day of March, 1915.

FRANK D. MONCKTON, Clerk.

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Appellees.

BRIEF FOR APPELLEES.

Statement of Facts.

In 1906, three corporations, hereinafter referred to as the Allied Corporations, were organized as California corporations. The Central Counties

Land Company, hereinafter referred to as the Land Company, was to acquire all the land bordering on Clear Lake. The California Industrial Company, hereinafter referred to as the Industrial Company, was to own all the riparian rights in said lake, to build a dam, and impound its waters. The Central California Power Company, hereinafter referred to as the Power Company, was to develop hydro-electric power. After leaving the power plant, the water was then to be devoted to irrigation.

The defendant, Yolo County Consolidated Water Company, a California corporation, hereinafter referred to as the Yolo Co. Water Company, was then in existence and owned canals and irrigation ditches in Yolo County, and rights in the natural flow of Cache Creek.

One Vandercook, acting in co-operation with the Allied Corporations (Tr. p. 19), entered into a *contract* in 1907 with the holders of three-fourths of the subscribed capital stock of the Yolo Co. Water Company, to purchase their stock (see Contract of January 19, 1907, Tr. pp. 9-18).

In 1908, a merger of the interests of the Allied Corporations and Vandercook was planned, to be controlled by the Clear Lake Power and Irrigation Company, still another California corporation, hereinafter referred to as the Merger Corporation. A merger agreement was entered into between the stockholders of the Allied Corporations and Vander-

cook, whereby the former agreed to transfer their assets, and the latter agreed to assign his rights under the aforesaid contract of January 19, 1907, to the Merger Corporation (Agreement, Mch. 3, 1908, between shareholders of Allied Corporations and Vandercook, Tr. pp. 25-28).

The Merger Corporation then passed a resolution to issue stock in exchange for the transfer of the stock of the Allied Corporations and Vandercook's contract with the stockholders of the Yolo Co. Water Company.

The Merger Corporation, seeing the necessity for increased capital, took steps to procure funds in the east from defendant White & Company.

The bill then alleges that defendant Craig, a stockholder of the Yolo Co. Water Company, and a director of the Land Company, planned to cancel the Vandercook agreement, and turn over the stock in the Yolo Co. Water Company and the holdings of the Land Company to White & Co. at a profit to himself (Tr. pp. 37-40).

It is then alleged that Craig organized the defendant, Yolo Water & Power Company, as an agency to carry out the conspiracy, procured the stockholders of the Yolo Co. Water Company to agree to sell their stock to him and transferred his rights to the said Yolo Water & Power Company (Tr. p. 42).

Then the stockholders of the Yolo Co. Water Company called upon Vandercook to fulfill his con-

tract of purchase and Vandercook, basing his action on the ground that he had procured an extension of time on his obligation to purchase and that such additional time for performance had not expired, treated this demand as a breach of the contract (Tr. p. 58).

It is then alleged that Craig, having secured said contract for the sale of the stock of the Yolo Co. Water Company, procured conveyances of land on Clear Lake from mortgagees of the Land Company and further caused bonds to be issued by the Yolo Water & Power Company, secured by a deed of trust of said lands (Tr. p. 43).

This was the situation in 1913. Then, to quote the bill:

> "On the *9th day of April, 1913, the plaintiff corporation was organized, as aforesaid, under the laws of the State of Arizona;* that the organization of said corporation was brought about at the instance of divers creditors of the said Central Counties Land Company; that the creditors of said last-named corporation were each and all persons who had been defrauded in and by the aforesaid scheme and conspiracy. That thereafter the claims and demands of all the creditors, so far as known to plaintiff, against said Central Counties Land Company, amounting to $700,000.00 or thereabouts, were duly *assigned, transferred and set over unto this plaintiff or agreed to be so assigned, transferred and set over,* and the claims of all the creditors of said California Industrial Company, and of the said Central California Power Company were likewise transferred, assigned, and set over to this plaintiff, and thereupon

there was issued to various creditors of the said corporations, in consideration thereof and exchange therefor, a total of thirty-five hundred (3500) shares of the capital stock of this plaintiff, of the par value of one hundred ($100.00) dollars each.

That thereafter the *trustees of the said Central Counties Land Company,* in partial satisfaction of the said creditors' claims, *sold, assigned, transferred and set over unto this plaintiff all of the assets and property, choses in action, rights and equities of every kind and character arising out of the transactions herein referred to, and belonging to the said Central Counties Land Company, or vested in them as trustees.* * * * And thereafter the *trustees of the said California Industrial Company and the trustees of the said Central California Power Company* (the rights of each of said last named corporations to do business having theretofore been forfeited for non-payment of the state license tax), in consideration of the cancellation of all of the indebtedness of the said respective corporations, *have sold, assigned, transferred, conveyed, set over and delivered to plaintiff all of the assets, properties, claims, and equities of every kind and character belonging to the said two last-named defunct corporations, or belonging to or vested in them as trustees thereof.* That the assets so received by plaintiff were of less value than the outstanding creditors' claims against said corporations, and that plaintiff's stockholders include substantially all of the creditors of said defunct corporation, who, as aforesaid, were defrauded by the said scheme and conspiracy.

That plaintiff is now the owner and holder of all of the aforesaid *properties, rights, choses in action, equities and assets* formerly owned by said defunct corporations and their trustees.

> That plaintiff is now the owner and holder of all of the *choses in action, rights and equities,* of the aforesaid California Counties Land Company, California Industrial Company, and Central California Power Company, and of substantially all, if not all, of the creditors' claims against said defunct corporations, and of the claims of the trustees of said defunct corporations, *including all choses in action, rights and equities accrued or accruing to them,* or to any or either of them, by reason of the aforesaid fraudulent acts and conduct of the said parties to the said fraudulent scheme and conspiracy, and of the defendant Yolo Water and Power Company, the agent and instrumentality of the said conspirators as aforesaid'' (Tr. pp. 73-75).

In short, the Allied Corporations, *California corporations,* assigned to the appellant, *an Arizona corporation* organized April 9, 1913, all their rights under Vandercook's contract with the stockholders of the Yolo Co. Water Company, *which constituted the principal asset of the Allied Corporations,* and all other "properties, rights, choses in action, equities and assets" (quoting from the bill, Tr. p. 75), as the Allied Corporations stood possessed of. Under the comprehensive clause above quoted must no doubt be included the rights which the Land Company had to redeem its land bordering on Clear Lake from the defendant Yolo Water and Power Company, which held under conveyance from the mortgagees of said Land Company.

Looking behind the legal verbiage which is employed in appellants multifarious prayer for relief,

it is clear that what appellant seeks is to enforce performance of the Vandercook agreement and to redeem the lands of the Land Company from its mortgages. In short, the appellant is the assignee of choses in action previously vested in the Allied Corporations, its assignors, and is seeking to recover upon said choses in action.

Argument on the Law.

Appellant opens his brief with the following query on page 12:

> "The sole question here is simply this: Is appellant to be deemed merely the assignee of choses in action? And is this bill so framed that for jurisdictional purposes the suit must be deemed a mere suit to recover on a chose in action?"

We may concede that the bill in equity in the case at bar is not "so framed" as to bring it within the application of Section 24 of the Judicial Code. But this Court in passing on the jurisdictional question here involved, will not stop at an examination of the framework of the bill, but will look through its form to its substance and apply Section 24 to its character as there revealed.

I.

THE BILL IN EQUITY SEEKS SPECIFIC PERFORMANCE OF THE RIGHTS ACQUIRED BY THE ALLIED CORPORATIONS UNDER VANDERCOOK'S CONTRACT WITH THE STOCKHOLDERS OF THE YOLO COUNTY CONSOLIDATED WATER COMPANY. APPELLANT MAINTAINS THE BILL AS AN ASSIGNEE SEEKING TO RECOVER UPON A CHOSE IN ACTION UNDER SECTION 24 OF THE JUDICIAL CODE.

An examination of the facts of this case will show that the principal relief sought is the enforcement of the rights under Vandercook's contract. The Allied Corporations, having perfected their plans to impound the waters of Clear Lake and develop hydro-electric power, wanted to acquire a distributing system for the disposition of the water so impounded for irrigation purposes. The Yolo County Consolidated Water Company owned such a system. Vandercook, acting in co-operation with the Allied Corporations, obtained a contract from the stockholders of three-fourth of the capital stock of the Yolo County Consolidated Water Company for the purchase of their holdings. This contract, by virtue of the "merger agreement" became the property of the Allied Corporations and then, by assignment, the property of appellant herein.

It follows that when appellant in its prayer for relief asks:

> "That the contracts to irrigate the said 50,000 acres or thereabouts which the defendant Yolo Water and Power Company has acquired as aforesaid in fraud of the rights of plaintiff be adjudged and decreed to be held by said defend-

> ant Yolo Water and Power Company in trust for plaintiff, and that said defendant be compelled to transfer, assign, set over and convey *said contracts, or any rights acquired thereunder,* to this plaintiff upon plaintiff's doing equity with respect thereto in the manner and to the extent that this Honorable Court shall adjudge to be fair, proper, and equitable" (Tr. pp. 91-92),

appellant is suing as assignee to recover upon a chose in action arising out of contract. Appellant is suing to *compel specific performance of a contract to convey stock.*

It is well settled that if the stock in question is the subject of every day sale in the market, specific performance will be denied. When, however, stock has no market value and cannot be readily obtained except from a party to the contract, by the prevailing rule in this country specific performance may be had. This is the rule in California.

> *Fleishman v. Woods,* 135 Cal. 256;
> *Krouse v. Woodward,* 110 Cal. 638;
> *Gilfillan v. Gilfillan,* 47 Cal. Decs. 707.

Accordingly, the case at bar is governed by the cases decided by the Supreme Court of the United States, which hold that a suit for the specific performance of a contract, or to enforce it, or to realize the fruits of the rights acquired by it, is one to "recover the contents of a chose in action" under the acts prior to 1912 and is one to "recover

upon a chose in action" under the Judicial Code of 1912.

Corbin v. Black Hawk Co., 105 U. S. 659; 26 L. ed. 1136;

Shoecraft v. Bloxham, 124 U. S. 730; 31 L. ed. 574;

The Plant Investment Co. v. Jacksonville etc. Ry. Co., 152 U. S. 71; 38 L. ed. 358.

It makes no difference that appellant characterizes its bill as one "to obtain various forms of equitable relief" and the particular count in the bill here under consideration as one "to establish a *constructive trust* in a large amount of real and personal property, including contracts for water rights; and to compel the conveyance thereof to appellant" (Appellant's Brief p. 2). The fact that appellant seeks the interposition of a court of equity does not alter the nature of its cause of action. But for Vandercook's contract with the stockholders of the Yolo County Consolidated Water Company, appellant could not now assert a constructive trust in the subject matter of such contract. In the last analysis, whatever may be the *form* of appellant's remedy, appellant seeks but to enforce its rights under a *contract.* It matters not whether the appellant's rights be *legal or equitable* in character, in either event appellant, as assignee, cannot pursue his remedy in the Federal Courts because of the express inhibition of Section 24 of the Judicial Code.

In *Shoecraft v. Bloxham,* 124 U. S. 730, 31 L. ed. 574, it is said:

> "It is true the complainant is a mortgagee in trust of such interest as the mortgagor had in the lands, but he brings the suit, not to foreclose the mortgage, but as one having a *beneficial interest in the contract* and consequently a right to enforce it. The object of the suit is to perfect the title to the lands mortgaged by enforcing the performance of the contract. The deed of trust sets out in full the contract, and conveys all the right, title and interest which the railroad company had or might thereafter acquire in and to the lands granted by the trustees by their contract of May 31, 1871. This conveyance of all right, title and interest 'in and to' the lands granted, or agreed to be granted, by the contract of sale, carried with it to the complainant *an interest in the contract so far as such lands were concerned, that is the right to perfect the title to such lands by enforcement of the contract. It was in legal effect the assignment of the contract itself."*

To the same effect we refer the Court to the following language of the Court in *Wilkinson v. Wilkinson,* 29 Fed. Cas. No. 17,677:

> "Whether the right be legal or equitable, whether the assignment thereof passed a legal title so as to enable the assignee to sue in his own name at law, or only an equitable title, to be asserted through the aid of a court of chancery, it was equally the purpose of this restrictive clause to prevent the citizenship of the assignee from enabling him to come into a court of the United States. Such, in general, was the view taken of it by the supreme court in Sheldon v. Sill, 8 How. (49 U. S.) 441; and which was not modified by Deshler v. Dodge,

16 How. (57 U. S.) 622, which explained its meaning."

Appellant refers this Court to the case of *Commonwealth S. S. Co. v. Am. Shipbuilding Co.,* 197 Fed. 780, in support of its statement that a suit like the case at bar is not within Section 24 of the Judicial Code. In that case the Hawgoods *promoted* the plaintiff company. While acting as promoters, they made certain contracts, to enure to the benefit of the plaintiff company when incorporated, with the defendant company. On these contracts they received a secret commission with the connivance of the defendant company, which had full knowledge of the relations between the Hawgoods and the plaintiff company. Soon after the formation of the plaintiff company and its adoption of the contracts, plaintiff discovered the fraud and brought an action for rescission of the contract.

It was objected by defendant that plaintiff was an assignee of the Hawgoods and that it did not appear from the bill that the assignor could have maintained the action.

The Court says:

"The complainant alleges facts in its bills of complaint showing that the Hawgoods while acting in a trust capacity received a bribe or commission.

"I think it is well established that, when an *agent* has been bribed to betray his *principal,* that fact is sufficient to entitle the principal to repudiate the transaction.

"Now does this bill endeavor to set forth a cause of action which seeks to enforce a right

conferred upon the Hawgoods by a contract assigned by them to the complainant? From the allegations of the bills, whatever contracts the Hawgoods had with the defendant for the construction of steamers *certainly gave the Hawgoods no right to rescind the contracts. The complainant's right to rescind the contract is not based on any contract rights transferred to it by the Hawgoods,* but the bills in their entirety proceed upon the theory that the rights of action exist in the complainant by reason of the fraud of the Hawgoods and the defendant.

"I cannot see that section 657, Rev. Stats. U. S. (U. S. Comp. St. 1901, p. 529) has any application to the bills in question.

"The complainant makes no claim that it is the assignee of the Hawgoods. They allege that the Hawgoods were the trustees and merely held the legal title, and *they rely on no cause of action which the Hawgoods had or might claim they had at any time. The complainant is not relying on the right of the Hawgoods,* but upon the fraud of the Hawgoods and the defendant."

No case could better express appellee's position in the case at bar. Of course the Hawgoods had no right of action against the defendant for rescission of the contract, for both the Hawgoods and the defendant were *parties to the fraud.* But in the case at bar the Allied Corporations and the defendants Craig and the Yolo Power and Water Company (to adopt a metaphor) were not parties to the fraud. The fraud was that of Craig and the Yolo Power and Water Company alone. The Allied Corporations had a right of action against said defendants for the fraud and this right of

action came to appellant by assignment. *Appellant relies on a cause of action which the Allied Corporations had.*

II.

THE BILL IN EQUITY FURTHER SEEKS TO REDEEM CERTAIN LAND OWNED BY THE CENTRAL COUNTIES LAND COMPANY FROM MORTGAGE AND TO CANCEL A DEED OF TRUST TO SAID LAND AS A CLOUD ON TITLE.

The bill avers that the Central Counties Land Company, one of the Allied Corporations, owned land under mortgage to divers persons; that the mortgages were in the form of deeds absolute; that the defendant conspirators procured the mortgagees to execute conveyances of said lands to the defendant Yolo Water and Power Company and that the said Yolo Water and Power Company caused bonds to be issued, and executed a deed of trust of said lands to secure the same. Accordingly the prayer asks:

> 1. "That defendants be compelled to set forth the rights which they now claim to have in and to the lands, and in and to the overflowage rights in lands, bordering upon Clear Lake and Cache Creek; that inquiry be made into the said claim, and, if found valid, then that further inquiry be made as to whether or not the same are held in trust for this plaintiff, and, if so, *that conveyance thereof be decreed and directed,* upon such terms as may be just and equitable, and if such rights are found to exist in defendants, or any or either of them in absolute ownership, then that the same be condemned herein to the use and benefit of this

plaintiff to the full extent that may be necessary for the aforesaid enterprise" (Tr. pp. 92-93).

2. "That the lien of the said deed of trust, if adjudged to be a valid lien at all, be confined in and by the decree of this Honorable Court to the properties situate in Yolo County, California, and owned by the defendants Yolo County Consolidated Water Company and Yolo Water and Power Company.

"That the said deed of trust so recorded, as aforesaid, in Lake County, California, and the record thereof, be adjudged to be a cloud upon plaintiff's title to the aforesaid Spring Valley ranch and the aforesaid Collier ranch, and removed and canceled as such cloud" (Tr. pp. 88-89).

It will be apparent that appellant, claiming through assignment from the Central Counties Land Company, is seeking to redeem lands owned by said company from a mortgage and to remove any cloud existing on said land. Appellees have discussed the rights of an assignee of a mortgagor seeking to redeem very fully in their briefs in *"Power and Irrigation Company of Clear Lake v. Capay Ditch Company et al.,"* No. 2500, and *"Power and Irrigation Company of Clear Lake v. Stephens et al.,"* No. 2501. The nature of the right of action of an assignee seeking to quiet title is considered in their brief in the former case. We respectfully refer to said briefs and beg leave to make the discussion of the jurisdictional questions therein contained a part hereof.

From the authorities cited in said discussions, as well as from what is set forth hereinabove, it must be clear that the action of the lower Court in dismissing this bill for want of jurisdiction was founded on a correct application of Section 24 of the Judicial Code. We respectfully submit that the decree dismissing this bill for want of jurisdiction was proper and should be affirmed.

Dated, San Francisco,
March 10, 1915.

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